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USSR Report

NATIONAL ECONOMY



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USSR REPORT
NATIONAL ECONOMY

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ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

ECONOMIST DEPLORES PADDING OF OUTPUT DATA, PILFERING

Moscow SOVETSKAYA ROSSIYA in Russian 18 Mar 87 p 1

[A. Kuklin interview with Aleksey Sergeyev, doctor of economic sciences: "Prestige of the Honest Ruble"]

[Text] The surmounting of wage leveling and consistent implementation of the principle of the remuneration of each workman per his contribution to the end result is a central problem of the restructuring of the economic mechanism. The universal affirmation of the principle of social justice--to each according to his labor--presupposes the preclusion from our life of such a social evil as unearned income. Prosperity which is dishonestly come by corrupts people, erodes their faith in our moral values and discredits the prestige of honest labor.

Doctor of Economic Sciences A.A. Sergeyev, head of a department of the USSR Academy of Sciences Economics Institute, has been studying the nature of unearned income. At the request of the editorial office he answers questions raised in readers' letters.

[Question] The question arising most often in the editorial mailbag is that of the variety of "under-the-counter" merchants. The activity of this category of persons deriving unearned income at the expense of the population is most noticeable. At the same time the mere fact of the vitality of the "under-the-counter" merchant testifies that his appearance is caused by a variety of problems in satisfaction of our everyday needs and requirements....

[Answer] Truly, the appearance of "under-the-counter" merchants was provoked by certain socioeconomic circumstances. To raise the quality and selection of consumer services to a scientifically substantiated level it is necessary, say, to enlist in this sphere several million additional workmen. There is simply no chance of this in the national economy owing to the demographic situation. But people do have real requirements, and there is effective demand for service. Consequently, supply is born also. It is estimated that privately the public is rendered R10-12 billion of services annually. Of course, prices here are far higher than official prices. Furthermore, the "under-the-counter" merchants have not participated with their income in state spending, although have to a considerable extent rendered services by using free of charge "free" materials, transport and so forth.

The working of the Individual Labor Activity Act will undoubtedly on the one hand contribute to the fuller satisfaction of the population's everyday requirements and, on the other, put a stop to negative trends of the "shadow economy". The impending taxation and registration of individual labor activity will make it possible to create normal conditions and a benevolent social atmosphere for those who wish to honestly engage in individual labor activity and to simultaneously struggle more efficiently against unearned income.

[Question] The legalization and regulation of individual labor activity demand the precise observance of the interests of both the consumer and the producer of services. Distortions and warps cannot be permitted here. New problems requiring of the administrative authorities flexible and optimum decisions will surely arise also?

[Answer] Of course, it will be necessary for the soviet, financial and law enforcement authorities to perform a tremendous amount of organizational-preparatory work. The openness of individual labor activity unsupported by precisely organized financial and administrative relations will in itself hardly lead to the desired results. Here is one aspect, for example: arranging things such that the persons engaging in individual labor activity may not carry on unchecked production thanks to the use free of charge of public resources. The initiative and gumption of many economic authorities are needed here. On the other hand, the acquisition of patents must not be a channel for the legalization of unearned income accumulated earlier.

How to prevent the outflow of skilled manpower to the individual labor activity sphere? It is necessary, I believe, to use not so much administrative as economic and moral levers. Providing the workman with the maximum creative scope and giving him a sense of satisfaction from his labor and seeking ultimately to ensure that the income and conditions of work of persons employed in the state sector be higher than in the sphere of individual labor activity. It would be odd were those employed in the service sphere able to earn several times more than steelworkers, for example. This would be at variance with the principle of social justice. Income must preserve incentives for involvement in individual labor activity, but at the same time it must be commensurate with the social norm.

[Question] The newspaper's readers are particularly sharp when writing about instances of the payment of unwarranted bonuses, extra incentives and figure-padding for the sake of gain. Checks show that a considerable proportion of such unearned income is connected with a breach of normal conditions of economic activity....

[Answer] Truly, there is the greatest danger to society precisely in unearned income connected with malfunctions in the operation of the economic mechanism and executives' use of "legal loopholes," as it were, in the economy. However strange it may seem, the main sphere where unearned income is derived is not individual labor activity but state and cooperative production. The most abundant source of unearned income is figure-padding.

What is usually understood by figure-padding is merely the overstatement of production volumes. In actual fact, any distortion of data on production results is tantamount to figure-padding and window-dressing. It is figure-padding which currently conceals the bulk of the embezzlement perpetrated in the national economy. We have grown accustomed to link it primarily with the populous tribe of pilferers. They do great damage. But we should remember something else also.

The higher authorities, which also would like to "look good," frequently induce window-dressing too. In construction, for example, approximately three-fourths of all uncovered embezzlement has been concealed by figure-padding. Where is the danger here? First, huge material and moral losses. Second, figure-padding also means the writing off on an enormous scale of raw material and intermediate products. The damage here is tremendous. In construction, for example, there are up to R4 of raw material and construction materials per R1 of wages. This is where the colossal figures come from....

Here is the reason why it is possible to swipe and resell at the construction sites--"acquire" any material required for private use. Go to the construction workers, and you will be given as much as you want of anything, no one counts up the property there. Window glass? Certainly! Cement? Take it! It sometimes reaches the point where construction materials are simply bulldozed into the ground--there has been no time for looting!

Indirectly all this squandering of public property exerts an extremely negative influence on the organization and efficiency of social production in general. According to the information of the inspecting authorities, figure-padding constitutes 1.5-3 percent of the production volume. Considerably more, in my opinion. And, furthermore, it is distributed by region and sector unevenly, and in time its dynamics also are unpredictable.

Why is figure-padding possible? First of all, accounting in the national economy is inadequately organized. Until recently the losses taken into account amounted merely to direct embezzlement, shortages and spoilage. A system of indicators of losses of resources in social production has now been established. But in practice account is taken more often than not merely of the losses of wage overpayment and illegal bonuses. Yet the illegal writing off of raw material and intermediate products is not taken into account, just as the "earned" wage paid as a result of the figure-padding is not returned.

Losses from rejects and low work quality are not taken into account in agriculture at all. Even today the quality of agricultural raw material is determined by the "touch" and "eye" method. This affords simply the broadest opportunities for data distortion and, consequently, embezzlement. Losses from the low quality of work are not taken into account in the motor pools. In industry, apart from food industry, account is not taken of losses from a reduction in the quality of products. In the fleet--river and maritime--and at agricultural equipment repair enterprises account is not taken of losses from idling. But losses which are not taken into account are objectively the equivalent of figure-padding--after all, the evaluation of the actual quality of management is thereby overstated. Losses which have occurred through the fault here of specific persons are attributed to the norms and objective

production waste and fall on the prime costs of output. The consumer is the loser.

Let us take, for example, the raw material sectors of industry. Here, according to the calculations of economists, figure-padding constitutes an annual 5 to 25 percent, and included here is the sum total of remuneration for work that has not been performed in the raw material sectors--approximately R600 million.

The facts are such that were we to put an end to figure-padding, the resources preserved from being bargained away at a loss could finance the entire social development program up to the year 2000! So how to combat this evil? There is just one way: an improvement in accounting. This may be done to some extent with the aid of the creation of new procedures and increased extra-departmental supervision. But even now, for example, there are approximately 50 "outside" inspectors per Moscow enterprise. What would be a cardinal solution of the problem? Let us think.

The fundamental reason for figure-padding lies in workmen's loss of the sense of proprietor of production. The exclusive-bureaucratic system of accounting is proving incapable of overcoming the endeavor of management, and of the workers also, to embellish the results of labor and take advantage of opportunities for the concealed acquisition of extra personal material benefits. As was aptly noted at the CPSU Central Committee January Plenum, socialist property has become "no one's," as it were. For this reason the most radical means of combating unearned income is the development of socialist production self-management, direct democracy and all the factors of cost accounting. Only on this basis may national economic accounting and control be truly nationwide. As yet workers are frequently artificially placed under conditions wherein they have an interest in figure-padding. For example, the law provides for the remuneration of a worker's idle time merely in the amount of half his rate. Management frequently takes advantage of this provision to justify figure-padding as an allegedly inevitable means of ensuring normal earnings under erratic supply conditions. But would it not be better to pay an average wage? The losses would, I believe, be immeasurably less than from figure-padding.

Precluding unearned income and affirming the principle of to each according to his labor depend most essentially on the development of the economic mechanism. The full use of cost accounting, transition to self-repayment and self-financing, the development of production self-management--this is the most effective medicine against the temptation to grab, appropriate and pilfer and obtain unearned income. Given cost accounting, the workmen would be dealing not with abstract "public property" categories but with their own bank account. Any encroachment thereon would be perceived as an encroachment on one's personal wallet. The workers themselves would grab ahold of thieves and petty pilferers. The process of transformation of economic circumstances would undoubtedly be accompanied by a psychological restructuring. The honest ruble would be both more substantial and more prestigious.

8850

CSO: 1820/103

AGRO-ECONOMICS, POLICY, ORGANIZATION

NIKONOV ON S & T ECONOMIC ROLE IN APK PRODUCTION

Moscow PRAVDA in Russian 24 Feb 87 p 2

[Article by A. Nikonov, academician, VASKhNIL president: "Science for Agroprom"; first paragraph is PRAVDA introduction]

[Text] The development of the agro-industrial complex and the fulfillment of the Food Program place higher demands both on practice and science. Restructuring is being carried out in agroprom, as in all the spheres of our society. How does it differ in rural areas from what was done earlier?

In the past restructuring concerned mainly upper circles, headquarters, ministries, and main administrations, not affecting the potential of labor collectives and a specific person. Now it is beginning precisely here, in "lower strata." This is a deep current. It and only it can ensure a forward breakthrough. Previously, reforms concerned organizational forms, while methods remained the same--administrative. Now, however, transition to economic levers is in the center of attention. Precisely they are the key to normal economic development, because administrative measures are justified only for extreme conditions. Previously, changes mostly affected the technical and technological aspects of production. Now they also encompass moral and psychological aspects, that is, man's thinking and his attitude toward labor and resources. At the same time, the importance of technology, of course, is not belittled.

Here is another characteristic feature. Previously, changes occurred within the framework of the extensive type of production. The emphasis was on an increase in areas and in livestock; in general, on quantitative indicators. Now, however, it is a matter of intensification envisaging a fuller utilization of productive forces and a commensuration of expenditures with output; in brief, of a qualitatively different aspect of the matter.

In the country there are now organizational forms filled with an economic content. They include the contract with its most efficient varieties, primarily intensive labor collectives and family links. They include cost accounting and intensive technologies. Finally, they include the economic system as a whole, which encompasses all production units. A skillful

utilization of all factors can ensure a qualitatively new level of development of the agro-industrial complex and its efficiency.

In rural areas there are very big potentials for labor productivity growth in agroprom links. As an analysis shows, only 28 percent of the workers in primary collectives and farm specialists work to the full extent of their abilities. This indicator is much higher in advanced cost accounting links, or in intensive labor collectives, as well as in those working on the basis of a family contract. Practice expects from scientists developments ensuring a sharp labor productivity growth and encompassing biology, technology, engineering, economics, and organization, that is, everything that forms the scientific basis for agro-industrial production.

VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] and its subdivisions began to more widely study and generalize the specific experience in mastering various forms of the collective contract and to investigate how the structure and functions of kolkhozes and sovkhoses will change in the process. Science will have to substantiate ways of democratizing management at all agroprom levels, primarily at the rayon level, that is, to analyze the social and economic consequences of the extensive development of contractual relations. Right now it can be stated that cost accounting and the contract can release a significant number of workers from the production part of the agrarian sector of certain regions. This means that it is necessary to envisage in advance an expansion of the sphere of labor application in rural areas. We try to intensify the sociological direction of our research.

What do we have in our arsenal today?

Varieties of winter crops suitable for cultivation according to intensive technologies with a potential yield of 80 to 100 quintals of grain, as well as early ripening corn varieties, have been developed for the country's basic grain regions. The period of development of new varieties has been shortened from 12-15 to 6-7 years. Cellular and genetic engineering methods have begun to be utilized more widely. The first varieties have already been obtained on their basis. Biotechnological methods in animal reproduction and other techniques of increasing the efficiency of fields and livestock sections have been developed and are being mastered. They include soil protective farming and agents for protecting plants and animals, primarily biological ones. Economic management systems as the basis for efficient production organization are being refined.

Nevertheless, agrarian science is greatly indebted to practice. This concerns both selection and the development of new technologies, economic systems, and other directions. We consistently try to explore unexplored areas. However, practice should also change its attitude toward science and its achievements and recommendations. A fuller realization of what is available to us would have given a considerable leap to production right now. It is hardly advisable to demand from science what can be done by simply strengthening discipline and improving organization. Indeed, no developments can compensate for mismanagement. For example, to obtain a yield of 3,000 kg of milk per cow, or a harvest of 20 quintals of grain per hectare, peasant common sense is

sufficient. However, in order to stably obtain 5,000 to 6,000 kg of milk per cow and more, or to gather 40 to 60 quintals of grain, nothing will happen without science and a strict observance of its recommendations. It is remarkable that our advanced kolkhozes and sovkhoses are friendly with science, utilize its data, maintain contractual relations with its institutions, and sometimes are even the base for the performance of experiments.

Science will be restructured more decisively and be more rapidly freed of sluggishness, inertia, and often, frankly speaking, a petty approach to practical tasks. A great deal is already being done. A total of 116 scientific production associations have been established in the VASKhNIL and agroprom system. They must be strengthened, although many have already shown a high efficiency. New forms of linking science with production are being created. Ten unproductive subdivisions and institutions have been abolished.

These are only the first steps in restructuring. For example, attempts to transform scientific collectives into a "continuation" of the managerial staff, by making scientists write various papers having no connection with the creative process and sending them as authorized agents on various economic campaigns, cannot be considered correct. Unfortunately, this is still encountered.

We see the chief thing in decisively activating man in science, changing over to flexible structures in the most creative collectives and to the goal-oriented problem method of forming subdivisions, getting away from stiff forms, intensifying the selection of talented youth, improving the skills of the scientists themselves, and teaching them.

Experience has shown the high effectiveness of temporary collectives, which include economists, sociologists, process engineers, and biologists. One of such collectives headed by VASKhNIL academician N. V. Krasnoshchekov has developed and realized a model of an intensive labor link. Today such subdivisions successfully operate on a number of kolkhozes and sovkhoses in Siberia and attain high harvests with a significant reduction in expenditures of labor and funds. Such models are needed for all production sectors and all regions. They are already being developed. Their size and structure should take into consideration objective conditions and practical experience. The movement for the establishment of cost accounting intensive labor contract collectives is expanding. Our task is to provide various types of developments with different approaches, to closely study practice, and to warn against possible errors.

We have embarked on the path of double integration, that is, with academic science, in order to raise the theoretical level, and, chiefly, with production. However, restructuring has proved to be an exceptionally complex matter, not so much organizationally as economically. After all, kolkhozes and sovkhoses have become accustomed to receiving research and development results free of charge. In our country science, like land and water, does not have a price. Perhaps this is one of the reasons for a decline in its prestige? A lot of money is paid for scientific developments abroad.

Apparently, we will also have to more boldly embark on direct economic relations with production.

We will have to enhance the prestige of science, to strengthen its personnel, to equip institutes financially, and to intensify their effect on production, connecting payment with final research results.

To constantly keep the mastering of economic methods of management in the field of vision and to help practical workers in this difficult and responsible matter are our most important tasks. An extensive, general application of cost accounting and the contract requires a fundamental restructuring of the style and methods of work at all levels. A brigade, livestock section, or link will not function on the basis of economic methods if bureaucratic administration methods predominate in superior links. Furthermore, the contract collective cannot have real independence and manifest initiative if the farm as a whole does not have such independence and if petty tutelage dominates over the kolkhoz and sovkhov. The importance of contractual cost accounting relations increases immeasurably. These are not simple matters. There are still many barriers of formalism and of overt and latent resistance on the path of their realization. However, they must be overcome, as demanded by life.

Numerically small contract collectives in the kolkhoz and sovkhov structure do not contradict, but, conversely, strengthen large-scale production, whose advantages are indisputable. A combination of economic and technical advantages with peasant responsibility and diligence occurs here. V. I. Lenin considered the diligent peasant the "central figure" in an economic advance. The contract and cost accounting have shown that we have such people, but collectives will work successfully only if cooperation with general economic services is efficient, supply is regular, and scientific support is good. This also places high demands on agricultural machine building.

Recent decisions by the plenum of the CPSU Central Committee open up wide opportunities for the growth of labor productivity and production as a whole. However, they cannot be realized automatically. A close alliance between science and practice will help to avoid formalism, routine, and the system of working by spurts and will not let the idea of renewal and restructuring be discredited.

11439

CSO: 1824/163

MAJOR CROP PROGRESS, WEATHER REPORTS

PREPARATIONS TO PREVENT DAMAGE FROM FLOOD URGED

Moscow GUDOK in Russian 3 Feb 87 p 1

[Article: "Spring Warns: Remember the Floods"]

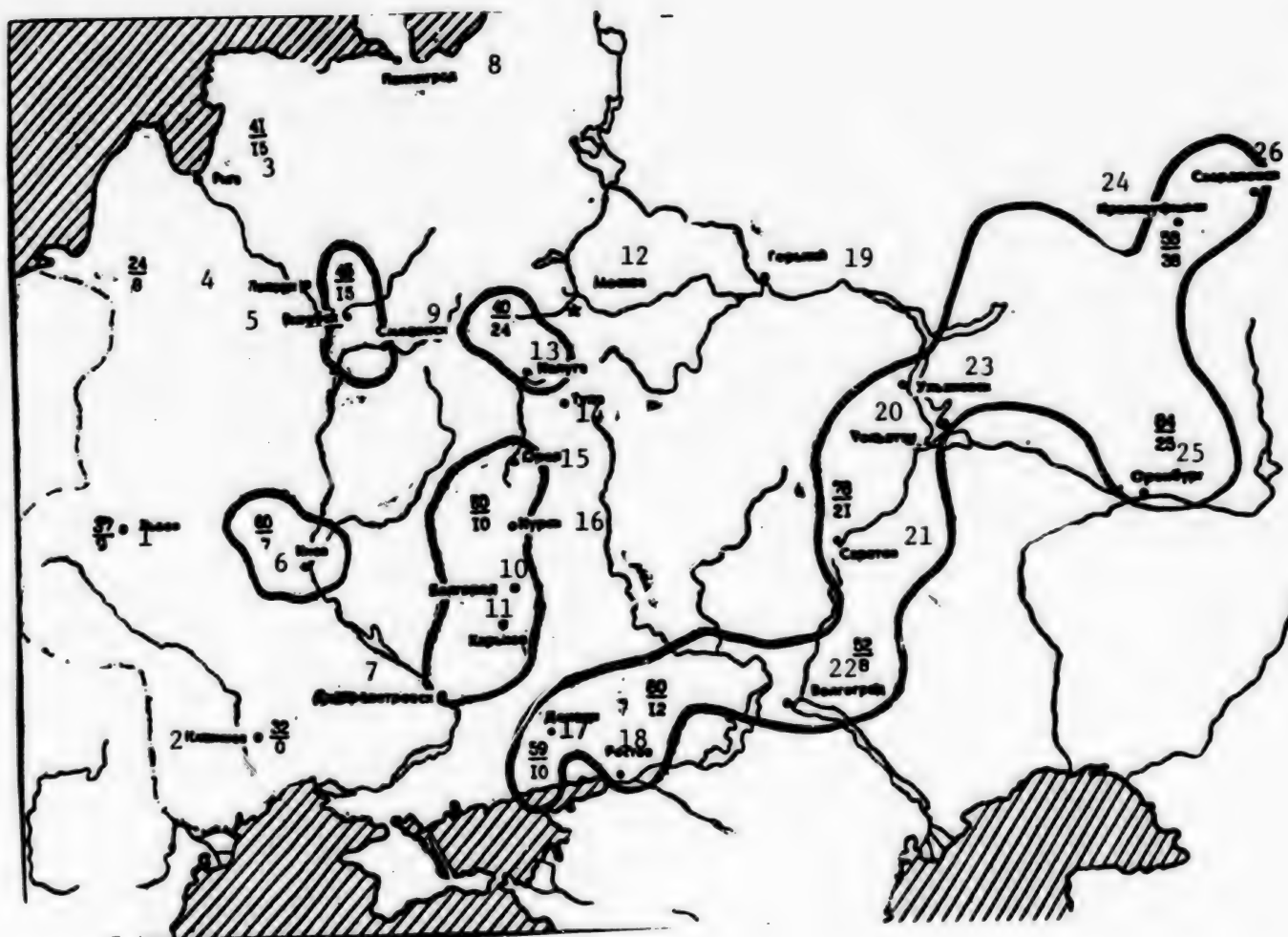
[Text] "Is it not early to talk about the battle against water?" The worldly-wise ask. "February will still provide snow to the heart's content."

This is the holy truth as far as February is concerned. This month represents a "snow blow," a "snow cart," and "winding roads" to the people for good reason. Thus, it can add light snow and trouble connected with it, although what has already fallen in the Ukraine, the Volga area, and Belorussia is fully sufficient for an unprecedented flood during spring with a rapid, uninterrupted thawing of snow. This means that it is time to have a talk about it.

Look at our map. The depth of the snow cover at the end of January is in the numerator. The normal depth for this time (in centimeters) is in the denominator. You see how big are the areas, on which this year the snow cover is two- or threefold and here and there six- to eightfold deeper than usually. Therefore, the preparation for the passage of such abundant spring water should be special and timely.

Headquarters for the battle against water are being established in the ministry, on roads, at departments, and at permanent way divisions. Such a military terminology is usual and not accidental. At times it is really necessary to wage entire battles, protecting embankments, bridges, and other structures from the unruly behavior of the element. And if it is so, first of all, it is necessary to know the "enemy's" strength and what we can set against him.

Therefore, right now a commission should evaluate snow reserves, examine the condition of dams and reservoirs belonging to kolkhozes, sovkhoses, and other organizations located on the upper side of railroad lines, and check whether their owners are ready to carry out all necessary operations. This is especially important, because the experience of past years confirms that the most serious troubles are caused by a sudden destruction of such dams.



Key:

- | | | |
|-------------------|--------------|------------------|
| 1. Lvov | 10. Belgorod | 19. Gorkiy |
| 2. Kishinev | 11. Kharkov | 20. Tolyatti |
| 3. Riga | 12. Moscow | 21. Saratov |
| 4. Polotsk | 13. Kaluga | 22. Volgograd |
| 5. Vitebsk | 14. Tula | 23. Ulyanovsk |
| 6. Kiev | 15. Orel | 24. Krasnoufimsk |
| 7. Dnepropetrovsk | 16. Kursk | 25. Orenburg |
| 8. Leningrad | 17. Donetsk | 26. Sverdlovsk |
| 9. Smolensk | 18. Rostov | |

Of course, on every road there are approved measures for the battle against water. Please check whether they are sufficient in connection with the present situation. Think what should be strengthened or added. To be sure, permanent way divisions know their most vulnerable sections, but new ones can also appear now. It is very important to envisage in advance where danger can arise in order to strengthen these places in good time and to deliver the necessary materials there.

A refined list of all dangerous places must be transferred to a depot in order to acquaint machine operators with it. Don't forget to also calculate how many and which materials you will need for the passage of external water and to give an appropriate order to the material and technical supply service.

When the event itself is closer, it is necessary, jointly with territorial hydrometeorological centers, to determine the time of the flood's arrival in order to promptly procure stones, rubble, and other materials and to remove snow and ice from the openings of small bridges and pipes. Don't forget to come to an arrangement with local party and Soviet bodies as to which organizations will assign people and equipment for help to railroad workers and to attach them to specific projects. Of course, you yourselves must form antierosion trains, supply them with everything that is necessary, remove snow from stations, and clear chutes for water runoff from switches.

Such a directive has already been sent to railroads and today we recall its main provisions for one purpose--to draw the attention of every railroad worker to the flood. No directives will give the necessary result if people are not ready and if they do not realize how serious the created situation is.

As a rule, we remember the first winter roads, but often forget that with respect to transport spring will also be the first for them.

Therefore, it is necessary to teach people in advance, seeing to it that in the complex situation of the passage of spring water everyone "knows his maneuver" accurately. Then all of us together will not tolerate mistakes and, consequently, interruptions in train traffic.

11439

CSO: 1824/164

MACHINERY, EQUIPMENT

UDC 631.15:658.589

TECHNICAL PROGRESS, AMORTIZATION OF EQUIPMENT

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 6, Jun 86 pp 28-36

[Article by Yu. Konkina, Corresponding Member of the All-Union Academy of Agricultural Sciences imeni V.I. Lenin: "Technical Progress and Amortization of Agricultural Equipment"]

[Text] In conformity with the Basic Directions for the Economic and Social Development of the USSR for the 1986-1990 Period and for the Period Up To the Year 2000, a more rapid replacement of low efficiency equipment by progressive and highly productive types of equipment is being carried out; the plans call for the replacement of more than one third of the active portion of fixed capital and for an increase of not less than twofold, compared to the 11th Five-Year Plan, in the volumes for the retirement of obsolete productive fixed capital. For the purpose of creating economic conditions for the timely replacement of fixed capital and for accelerating scientific-technical progress, the decree of the USSR Council of Ministers entitled "Development of New Amortization Deduction Norms for Fixed Capital of the USSR National Economy" recognized the need for reexamining the norms for amortization deductions. In conformity with the mentioned decree, the development of new amortization deduction norms will be carried out based upon taking into account more completely the normative service lives for machinery and equipment, the physical obsolescence of fixed capital, an increase in the intensity of their operation and a reduction in the amortization schedules.

Orientation towards a reduction in the amortization schedules for the physical elements of fixed capital is not equivalent to a reduction in the service lives for machines and equipment under specific farm conditions. The urgent nature of this problem concerned with the thrifty, efficient and at the same time intensive use of fixed capital is continuing to increase. First of all, it must be strengthened by measures which exclude the writing off of equipment prior to the expiration of its amortization period, such that the initial value for the means of labor, in the socially required amounts, will be transferred into the amortization fund and become a source for simple and expanded reproduction of fixed capital. Under these conditions, the accumulation and efficient use of amortization deductions assumes special importance. In expanding the rights of USSR Gosagroprom [State Agro-industrial Committee] enterprises in use of the fund for development and amortization deductions, technical re-equipping can be financed in

considerable amounts by means of the amortization fund, that is, "measures for accelerating scientific-technical progress must pay for themselves" (M.S. Gorbachev. Basic Problem of the Party's Economic Policy. Politizdat, 1985).

A complete definition of the amortization norms for renovation and deductions for capital repairs is basically new. As is known, the general amortization norms in existence at the present time consist of deductions for renovation and for capital repairs. The new amortization norms to be placed in operation in 1988 call only for the complete restoration of fixed capital. The amortization norms for renovation must reflect rather objectively the actual wear and tear of the fixed capital and ensure the possibility of determining their residual value.

Capital repairs and other types of repair operations should ideally be financed from a single source -- a repair fund, which is at the disposal of enterprises will be used by them for this special purpose. The remains from this fund are retained for the next year and are not subject to withdrawal.

The financing of expenditures for the maintenance of machines in good working condition, from one source, promotes to a large degree the technical essence of complicated types of repair operations on agricultural equipment.

In recent years, a trend has appeared towards a reduction in the scope of capital repairs on tractors and combines, as a result of the increased reliability and durability of the new equipment, improvements in the quality of the work, reductions in the machine workloads and for other reasons. However, a complex of operations for maintaining equipment in good working condition, including capital repair as a means for the partial renovation of machines, must be carried out during the course of the established service lives, since this is a technically necessary and economically feasible measure.

An amortization norm is an important economic lever for accelerating scientific-technical progress and for creating financial opportunities for ensuring the timely renovation of fixed productive capital. Theoretically sound amortization norms must be computed based upon a true evaluation of the fixed capital, its replacement value and the normative service life, which takes into account physical wear and obsolescence. The amortization periods must be shorter than the period of physical wear.

A computation of the amortization norms for the fixed capital of USSR Gosagroprom enterprises requires special thoroughness, while taking into account the specifics of seasonal use of agricultural equipment, the considerable differences in natural-climatic conditions, the intensity of the workload and other factors. At the same time, agriculture has accumulated considerable experience in the use of various amortization norms and the system for computing and utilizing them for renovation of the machine and tractor pool.

The rates for the saturation and renovation of the machine-tractor pool could be higher if a more sound amortization strategy was implemented. The latter is determined by the agrarian policy for the corresponding stage in

agricultural development and thus it does not remain constant, but rather it changes in connection with scientific-technical progress, the degree to which enterprises are supplied with the means of labor and their reliability, durability and economic state.

Amortization appears as an independent form of functioning, a socially necessary norm for the consumption of fixed capital and an economic prerequisite for the reproduction of fixed capital. For cost accounting enterprises, amortization standardizes a portion of the participation of fixed capital in the formation of production costs and thus the establishment of a socially necessary amortization norm is an important practical task.

Amortization norms in percentages of the initial value and in firm fixed rates per unit of product, work or service performed differ according to the method employed for applying the initial value of the means of labor to output. In amortization practice for agricultural equipment and motor vehicles, norms are established both in the form of fixed rates per unit of work and in percentages of initial value. The method of computing amortization directly proportional to the time that a machine is in operation or to the volume of work carried out is the only one being employed by socialist enterprises.

Even during the dawn of agricultural industrialization, amortization strategy was oriented according to three basic directions: 1. repayment of the entire initial cost of machines regardless of the intensity of use. 2. repayment of the entire initial cost for an earlier established volume of work, in hours, regardless of the period of use in years. 3. repayment of the entire initial cost for an established volume of work, in hours, but not for more than 10 years.

From a theoretical standpoint, the third method, as a synthesis of the first two, is of special interest and importance, since it calls not only for a definition and validation of an earlier assigned machine service life, and its mandatory use throughout this service life, but it also predetermines from a calendar standpoint that the computational period for amortization cannot be longer than the earlier established period and that during this period the entire initial cost must necessarily be repaid, regardless of the useful workload volume carried out prior to this time. This method for computing amortization served to stimulate the efficient use of equipment and the timely accumulation of resources for its reproduction.

In the case of low equipment support for the rural areas, the amortization norms for its reproduction played a purely symbolic role; the demand for machines exceeded considerably the delivery volumes and this predetermined the need for regulating the distribution of equipment, based upon the tasks confronting agricultural production.

The machine-tractor stations, in serving as active levers for the extension of equipment policies in the rural areas, ensured a highly intensive use of machines and their maintenance in good working condition. But the MTS's [machine-tractor stations] did not compute the amortization of tractors in accordance with the complete norm; for them, only the norm for deductions for capital repairs, current repair and technical services (technical

maintenance), in the form of firm rates for a hectare of soft (standard) plowing, with differentiation according to the tractor marks and the zones of the country, was established. The inter-repair schedules are established in hectares of soft plowing, that is, in units of active work. The limiting prices for capital repairs provided an opportunity for controlling and comparing the deductions of resources for repairs against actual expenditures.

Prior to 1959, amortization norms were in effect for sovkhozes which included a norm for renovation and a norm for capital repairs in firm rates per unit of work carried out, that is, in rubles per hectare of soft plowing.

In connection with the reorganization of MTS's and the sale of equipment to kolkhozes, temporary amortization norms were established for tractors, combines and self-propelled undercarriages which were based upon firm rates in rubles per unit of work.

It was noted above that the amortization strategy must conform to the particular period of scientific-technical progress and it must promote the carrying out of the economic tasks confronting individual enterprises. Thus, during early stages in the mechanization of agricultural production and when there was an acute shortage of equipment, the task of amortization consisted of stimulating an accumulation of equipment during its use, regardless of the degree of physical wear and tear. During this period, it was practically impossible to take into account equipment obsolescence. Operations continued so long as it was still possible to maintain the life of a machine by means of repair work or technical means available to the farms or branch, regardless of the growth in expenditures for this purpose.

The system for computing amortization in firm rates per unit of useful work conformed rather adequately to this period in the development of mechanization. It stimulated the acquisition of equipment and this led to a reduction in the annual workload for a tractor, combine or other items of equipment and also to a reduction in the agrotechnical periods for the carrying out of agricultural work. The accumulation of equipment and a reduction in the intensity of use of machines commenced during a definite stage on the farms. A trend towards the acquisition of unnecessary equipment began to be observed at some economically strong sovkhozes. However, the presence of surplus machines did not adversely affect the financial results of the farms, since it was economically advantageous to compute amortization only for work carried out and to apply these expenses to output produced, with no reimbursement for losses from surplus equipment that was not used or for which there was a low workload. Indeed, for a per hectare computation of amortization, its annual amount was determined by the volume of mechanized work performed and was not dependent upon the number or value of the machines remaining on a farm's balance. The payments for equipment by means of state centralized investments exerted, to an even greater degree, a stimulating effect on the acquisition of equipment by sovkhozes, without conforming to the true equipment requirements or responding economically to the surplus machines.

Commencing in 1963, a new system and new norms for the amortization of agricultural equipment were established, which called for repayment of the

initial cost on the basis of a firm annual percentage rate and a separate rate -- for financing the partial renovation of equipment and its capital repair. A break-down of the amortization norm for renovation and capital repair was of considerable importance with regard to the creation of corresponding portions of the amortization fund for the complete and partial reproduction of the fixed capital of agricultural enterprises.

In recent years, changes have taken place in the absolute values for the amortization norms and yet the computational system has not undergone any basic changes, with the exception of the statute introduced in 1982 which eliminated an amortization computation and fund payments for machines that have completed their amortization period.

The amortization system introduced in 1963, in the form of an established firm annual percentage rate (for example -- 24.5 percent for DT-75 tractors, including 12.5 percent for renovation), stipulated that each year, in conformity with the rate for renovation, 12.5 percent of the initial cost for a tractor is transferred to the amortization fund and is included in the cost for work carried out and products produced, regardless of the tractor's annual workload. Not only were considerably better financial conditions created for the complete reproduction of machines in conformity with the requirements of scientific-technical progress, but in addition economic stimuli appeared which served to encourage the farms not to purchase unnecessary equipment, to intensify their use of machines, to raise their shift and annual output and to lower the wear and tear caused by the non-use of equipment.

On the whole however, the progressive system for computing amortization, which conforms to the period for converting over to all-round production mechanization and which is directed towards the intensive use and timely renovation of equipment, did not produce the results expected because of an instruction which called for the computation of amortization and payments into the funds to be continued even after the entire initial value of the fixed capital had been converted into output.

From a theoretical standpoint, the failure of this arrangement was obvious: it was in conflict with the political-economic position which holds that the size of the amortization fund is limited by the initial value of the fixed capital. And if the entire initial value of a machine has already been converted into the production of goods, then without lapsing into a conflict with the materialistic concept of the properties of goods which possess use value and general value, it can be said that the amortization of initial cost which has already been repaid must not be continued. However, amortization continued to be carried out. In this instance, the profits of enterprises were transferred over to the amortization fund and the costs for goods produced rose unjustifiably. Stimuli appeared for the writing off of equipment, despite the fact that a considerable portion of the machines, in terms of their technical parameters, could still be used on the farms. Moreover, economic interest in the use of old but suitable equipment was weakened by the unprofitable nature of repair work, the operation of machines during the continuing process of amortization computations and payments into the funds and also by the constant shortage of spare parts.

By 1965, factual material had been accumulated on the accelerated writing off of equipment from the balances of sovkhoses. This made possible a theoretically sound recommendation for terminating amortization charges for machines which had served out their amortization periods and to confirm this position with facts underscoring the economic feasibility. But the question concerning terminating amortization charges for machines the initial cost of which had been repaid was not resolved until 1982 and this brought about a considerable writing off of machines which were still suitable for further operations.

In 1977, the writing off of agricultural equipment prior to the expiration of the amortization period was forbidden. However, no reduction in the writing off of equipment took place. In 1977, for example, 253,700 tractors were written off in agriculture and in 1980 -- 278,700 and for grain harvesting combines the figures were 82,500 and 87,700 respectively. According to inspection data furnished by the USSR Central Statistical Administration, considerable numbers of tractors are still being written off prior to the expiration of their amortization period.

Commencing in January 1982, for the purpose of raising the interest of kolkhoses, sovkhoses and other state agricultural enterprises in extending the operational periods of their tractors, transport equipment and agricultural and land reclamation machines and equipment, a system was established according to which amortization deductions and payments into the funds for machines and equipment which had served out their amortization periods were no longer to be carried out. This amortization strategy conformed fully to the theoretical principles for the renovation of equipment and met the requirements for cost accounting operations.

This amortization strategy, in reflecting the appropriate stage in development of the productive forces, scientific-technical progress, the level of support for production in the form of fixed capital, improvements in the fixed capital and the financial potential of the national economy and the branch, defines the scientifically sound periods for amortization of the means of labor, the amortization norms and the regularities in the formation and accumulation of the amortization fund.

At the present time, with the enterprises under the direction of highly skilled specialists and with the necessary conditions having been created for cost accounting operations by the collectives of enterprises, it is advisable, as mentioned during the conference in the CPSU Central Committee on the problem of accelerating scientific-technical progress during 1985, to increase the responsibility of enterprises for raising the technical level and economic effectiveness of production and to provide them with an opportunity to handle the development fund and amortization deductions independently. Within USSR Gosagroprom [State Agro-industrial Committee], the sovkhoses and kolkhoses must operate under equal conditions. It is known that the latter decide independently on the most advisable method for employing the amortization fund.

The establishment of the amortization norms and the amortization schedules which serve as their basis is a prerogative of the state. Herein is expressed

the unified state economic and financial policy for administering the reproduction process.

An amortization schedule, as a computational category and subsequently approved specific amount, one which expresses the duration of the period for the repayment of the initial cost of a fixed capital group, does not coincide with the actual service life for each specific machine included in this group. The actual service lives for individual means of labor, used even under identical conditions, have a broad range of dispersion. Nevertheless, the average value for the actual service lives for large groups of similar types of machines gravitates towards the established amortization period.

TABLE 1

Service Life for Agricultural Tractors

| Марка трактора 1 | Амортизационный срок 2 | Фактические сроки службы 3 тракторов, лет | | Списано до исчерпания срока амортизации 4 |
|------------------------------|------------------------------|--|---------------|---|
| | | в среднем 4 | вариации 5 | |
| K-700, K-700A | 10 | 11 | 8,9 13,1 | 26,2 |
| T-4 | 8 | 9,4 | 7,6-11,2 | 12,8 |
| T-150K | 10 | 9,1 | 7,1-11,2 | — |
| ДТ-75М | 8 | 9 | 7,5-10,5 | 15,0 |
| ДТ-75 | 8 | 9,3 | 7,2-11,4 | 16,4 |
| T-74 | 8 | 9,6 | 7,3-11,9 | 12,0 |
| MT3-80, MT3-82 | 10 | 7,7 | 5,8-9,6 | — |
| MT3-50, MT3-52 | 9 | 12,2 | 9,2-15,2 | 10,7 |
| ЮМЗ-6 | 10 | 10,1 | 8,5-11,7 | 37,4 |
| Key: T-40 всех модификаций 7 | 8 | 9,4 | 7-11,8 | 20,4 |

- | | |
|-----------------------------|-----------------------------------|
| 1. Mark of tractor | 5. Variation |
| 2. Amortization period | 6. Written off upon expiration of |
| 3. Actual service lives for | amortization period, in % |
| tractors, in years | 7. T-40 of all modifications |
| 4. Average | |

The actual service lives for tractors in 1982, computed at the Problem Laboratory of the Moscow Institute of Agricultural Engineers using inspection materials of the USSR TsSU [Central Statistical Administration], are shown in Table 1.

As can be seen from a distribution of the actual service lives for tractors, the established and approved amortization period lies in a range separating a considerable proportion of the machines written off prior to its expiration. This proportion has been and continues to be considerable throughout the past 20 years.

The double functioning of the use value and regular value assumes that at the moment that a machine is written off its initial value in the socially needed amounts must be transferred over to the amortization fund. This theoretical position is realized only partially in conformity with the specific material elements of the fixed capital. In actual practice, one portion of the machines is being written off prior to the expiration of the established amortization period, while the other is used beyond the amortization period. But in connection with the statute on termination of amortization upon the

expiration of the established period, no corresponding withholdings for the amortization fund are carried out.

This means that a portion of the initial value of the fixed productive capital is irretrievably lost for the amortization fund of an enterprise and the opportunities for reproduction are lowered, the implementation of which in this instance requires the use of savings instead of amortization deductions. This can be avoided by reducing the amortization period and raising the amortization norms. The principal trend of the amortization strategy at the present time must be that of ensuring the financial opportunities for the timely renovation of equipment by means of the amortization fund, by lowering the amortization periods and accelerating the turnover in fixed capital. None of this will impede the extended use of machines beyond the amortization periods, up to the limits of economic advisability, and this is borne out by numerous examples and a mass of data.

The existing amortization strategy was computed for the most part taking into account the regularities in the physical wear and tear of the means of labor. Obsolescence is not reflected when determining the amortization norms and periods. Such a deviation from the theory of amortization is acceptable to a certain degree only for a period involving incomplete equipment support for agriculture. Obsolescence is present in this instance, but its manifestation under management conditions does not bring about a noticeable reduction in the service lives of the machines, not even with the appearance of more efficient equipment, albeit in a smaller volume. New machines only signal the commencement of the process of obsolescence of old and less efficient equipment, which will be used up until that moment when the entire volume of mechanized operations of the appropriate type will be carried out on new machines.

However, obsolescence, by encouraging the trend towards a reduction in the service lives of equipment, raises the need for accelerating amortization through the use of higher norms.

The urgent nature of the problems of fixed capital amortization has brought about the appearance and discussion in the press of valuable proposals for promoting the development of recommendations aimed at raising the efficiency of use of agricultural equipment. At the same time, the economic incorrectness and at times basically erroneous interpretation of the amortization process, one which disorients the readers, can be traced in a number of publications. Thus, for example, mention has been made repeatedly of the fact that lowered service lives for equipment, prior to its being written off from a balance, have been established, that there are established norms for the maximum service of machines and that there is also a norm for the writing off of equipment. The role played by such a norm is attributed to the established amortization norms, that is, to the period for the repayment of initial cost.

The identification of an amortization norm, for example 12.5 percent annually, with a norm for the writing off of equipment is entirely wrong from both a theoretical and practical standpoint. No directive documents have established nor can they establish a norm which could call for the writing off of an

entire group of tractors after 8 years. Depending upon the operating conditions, the intensity of use, the zone of use and the quality of the repair and servicing work, each specific tractor serves as long as it is economically profitable for the farm which employs it. As was shown above, the dispersion range for tractors which have been written off is rather broad. As an economic category which reflects the turnover and circulation of productive capital, an amortization norm is based upon the regularities of physical and moral wear and tear and not conversely. The expression "large norms for the writing off of agricultural equipment" is incorrect from a theoretical standpoint. In actual practice, the ahead-of-schedule writing off of equipment can never be attributed to the norm for writing off, since it calls for the writing off of equipment at a strictly defined time and no earlier. In reality, the distribution of written off machines reveals that approximately 25 percent of the tractors are written off prior to the expiration of their amortization period. This underscores the need for increasing the amortization norms for the purpose of repaying a large portion of the initial cost.

The desire to repay all of the initial cost for the means of labor during the amortization process is realized in economic practice by applying the uncharged amortization to the economic results for the current year. The profit is decreased by this amount. Uncharged amortization can also be applied to the production costs. In this instance, the unpaid amortization of a portion of the initial cost of the means of labor brings about a deterioration in the indicators for the production activity of an enterprise during the current year, despite the fact that the causes for this situation developed in previous years. It is our opinion that amortization deductions must be completed during the period of functioning of the means of labor and the production of goods and not after the retirement of the fixed capital.

Distinctive characteristics of the use of an amortization fund for expanding production include the following. The amortization is carried out commencing with the moment that the means of labor are first placed in operation and it is required for the repayment of wear and tear only after they have been retired from use. Thus a reserve monetary fund is created which ideally should be used rather than simply maintained, with the funds being used for expanding production.

Table 2 reveals that when use is made of 100 tractors, the accumulated amortization fund makes it possible to increase considerably the initial production capabilities of the tractor pool by means of the amortization fund, on a self-financing basis and with use being made of various methods for computing amortization.

With tractors being replaced every 8 years in connection with their obsolescence and retirement, a farm, over a period of 16 years, had at its disposal tractor pool capabilities equivalent to 1,600 tractor years. It is apparent from the table that when use was made of the amortization fund for expanding the pool, its capabilities during this period increased to 2,374-2,992 tractor years, that is, by a factor of 1.5-1.9. Notwithstanding the individual peculiarities of each method, all of them make it possible to expand the tractor pool and increase its productive capability in the absence

of additional capital investments. Such use of the amortization fund derives from the specific functioning of material elements of the fixed capital.

TABLE 2

Expansion of Tractor Pool By Means of Amortization With Computation By Various Methods

| Методы расчета амортизации | Количество тракторов (штук), использованных в течение лет | | | | | | | | | | | | | | | | Всего тракто- ров |
|----------------------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| 1 | | | | | | | | | | | | | | | | | 3 |
| Пропорциональ- ный 4 | 100 | 112 | 126 | 142 | 160 | 180 | 202 | 227 | 256 | 283 | 310 | 338 | 367 | 397 | 428 | 460 | 2635 |
| Кумулятивный 5 | 100 | 122 | 145 | 170 | 193 | 214 | 232 | 245 | 252 | 254 | 252 | 246 | 236 | 222 | 204 | 181 | 2601 |
| Регрессионный 6 | 100 | 118 | 137 | 156 | 174 | 193 | 212 | 230 | 249 | 268 | 286 | 304 | 322 | 340 | 358 | 376 | 2374 |
| Двойной регрес- сии 7 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 2992 |

Key:

- | | |
|--|----------------------|
| 1. Methods for computing amortization | 4. By groups |
| 2. Number of tractors (units) used | 5. Cumulative |
| 3. Total number of tractors | 6. Regressive |
| | 7. Double regression |

The amortization fund at large socialist enterprises can be used for the constant renovation of machines and equipment, but this does not make full use of its value. Under the conditions imposed by rapid technical progress, renovation is proper only on a new technical basis. Such renovation of and by itself is equivalent to additional expansion and to growth in the productive capability of the fixed capital, with no increase in its value.

An amortization fund is used as a source not only for renovation but also for expansion. The scale at which an amortization fund serves as a fund for expansion is dependent upon the value of the fixed capital of enterprises and it increases with growth in the latter.

Thus an amortization fund which was created according to socially necessary norms and in complete conformity with the law of value for the formation of production expenses contains within itself the economic prerequisites for the expanded reproduction of fixed capital in physical terms, thus ensuring the extensive and intensive development of production.

K. Marx wrote that by means of the amortization fund "...reproduction is completed and, in addition, if we examine it from a social point of view, so also is reproduction on an expanded scale: extensive expansion if only the field of production is expanded and intensive expansion if more efficient means of production are employed (K. Marx and F. Engels. Works, 2d Edition, Volume 24, page 193). The appearance in agriculture of new high-speed tractors, highly productive combines and other more efficient items of equipment testifies to the expanded reproduction of the machine-tractor pool of an intensive type.

The wear and tear of fixed capital which develops during the course of industrial consumption appears as the primary reason for a loss in the use value of the capital. Thus the amortization charge must reflect the actual wear and tear of the material elements of the fixed capital. Only if this is the case will the socially required proportion of the fixed capital value, corresponding to the wear and tear, be transferred over to the amortization fund.

Whereas the wear and tear of machines having a definite tolerance is characterized by the expenditure of funds for correcting the situation (repair and maintenance of the machines in proper working order), it turns out that for modern tractors these expenses increase as the equipment becomes older and this underscores the irregular nature of the wear and tear. The annual amortization which must reflect the wear and tear remains constant.

The basic approach for validating the amortization method is embodied in the works of K. Marx, who wrote: "Value which remains off to the side and is purely a symbolic reflection of value exists only in the form of use value or in a particular thing. Thus, if use value is lost, then value is also lost" (K. Marx and F. Engels. Works, 2d Edition, Vol. 23, pp 213-214).

Thus the task consists of establishing the regularities for the loss of use value. Let us examine this using a specific example. Let us assume that a K-700 tractor, which costs 12,000 rubles, must be amortized over a period of 10 years. According to the existing proportional method for amortization, the wear and tear after 5 years will be 50 percent and the residual value will equal one half of the original value. Under cost accounting conditions, all enterprises are interested in using a new tractor for the first half of the period and thereafter, if possible, selling it at half price to another enterprise. According to inspection data made available by USSR TsSU [Central Statistical Administration], K-700 tractors require 11,500 rubles worth of expenditures for maintenance in proper working condition during the first 5 years and 14,800 rubles worth of expenditures during the second 5 years. During the first 5 years they work 15,700 standard hectares and during the second 5 years -- only 12,300 standard hectares. During the first 5 years the expenditures for maintaining a tractor in proper working order per standard hectare amount to 73 kopecks and during the second 5 years -- 1 ruble and 20 kopecks, or 64 percent more. This signifies that the norms for the proportional method do not reflect the true loss by a tractor of its use value or general value. Thus, more than one half of the price of a tractor must be paid off during the first 5 years of use, since it is during this period that a machine is more economical and efficient and thus the cost for its operation must be greater.

Forgetting for the moment specific tractors, but bearing in mind the regularity regarding the distribution of annual expenditures, let us assume that instead of one machine there are 10 machines in operation with an overall initial value of S_{pm} . The annual expenditures for the maintenance of machines in proper working order change as $R_{m1} < R_{m2} \dots < R_{m10}$, and this provides the basis for a change in the initial values for the machines and to record it in the form:

$$S_{pm1} > S_{pm2} > \dots > S_{pm10} \text{ if } \sum_{i=1}^{10} S_{pm-i} = S_{pm}$$

Such an assumption is fully justified "since goods are purchased by a customer not because they have general value but because they have 'use value' and they are used for definite purposes and thus it is obvious: 1) the use values are evaluated, that is, their quality is studied (in like manner as the quantity is measured, weighed and so forth); 2) that when various types of goods can replace one another for consumption purposes, a preference is shown for a particular type and so forth" (K. Marx, F. Engels. Works, 2d Edition, Vol. 19, p 387).

In the case examined above, the evaluation of use values was carried out in accordance with the level for annual expenses. The fewer the annual expenses for maintaining the machines in proper working order, the higher their quality and the higher the use value. Some machines were presented as different types of goods, used for the same purposes of production consumption and naturally a preference will be shown for machines having fewer annual expenditures, as defined by their higher use value and general value.

Since the service life for each of the 10 machines equalled 1 year, the entire initial value of the machines will be repaid by amortization. It was noted above that the initial values for the machines were arranged in a decreasing order, in the same manner in which the expenditures for maintaining them in proper working order increased. The computed amortization sums will be lower in the system for decreasing initial values, that is, for increasing annual expenditures for maintaining the machines in proper working order and a drop in their quality, the amortization norm must be regressive, decreasing according to law and reflecting the nature of the change in the use value of a machine in connection with aging. The annual operational expenditures which increase with the aging of machines must be supplemented by an annual amortization amount equivalent for all years of use of a machine and which will ensure continued efficient use of that machine throughout the entire established amortization period.

By way of an example, let us examine a change in wear and tear depending upon the service life for a group of tractors. In Table 3, data is provided for 2,625 tractors which makes it possible to compare the actual wear and tear of tractors against the wear and tear computed according to the norms for amortization and without taking residual value into account.

It is apparent from the table that all of the methods examined for computing amortization reflect wear and tear with varying degrees of approximation.

Depending upon the structural characteristics of the machines and the existing system for technical operation, it is possible to select a series of numbers which would reflect wear and tear with greater reliability. In conformity with the nature of wear and tear, a regressive series has been computed having an amortization norm of 30 percent of the original value of a tractor for the first year of use and the same norm for the residual value for subsequent years. This series ensures the repayment of approximately 95 percent of the initial value of a machine, with comparatively small deviations in evaluating wear and tear by years for the period of use.

TABLE 3

Comparative Wear and Tear of Tractors When Computing Amortization Using Various Methods

| Износ, % 1 | 2. Период использования, лет | | | | | | | |
|---|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Фактический 3 | 26,5 | 48,2 | 64,8 | 75,9 | 84,2 | 90,4 | 95,7 | 100 |
| По нормам амортизации с применением метода: 4 | | | | | | | | |
| пропорционального 5 | 12,5 | 25 | 37,5 | 50 | 62,5 | 75 | 87,5 | 100 |
| кумулятивного 6 | 22,2 | 41,6 | 58,3 | 72,2 | 83,3 | 91,6 | 97,2 | 100 |
| регрессивного 7 | 18,75 | 33,95 | 46,25 | 56,25 | 64,45 | 71,35 | 76,85 | 81,25 |
| двойной регрессии 8 | 25 | 43,7 | 57,7 | 68,2 | 76,1 | 82,0 | 86,5 | 89,5 |
| регрессивного 7 | 30 | 51 | 65,70 | 75,99 | 83,19 | 89,13 | 92,39 | 94,57 |

Key:

- | | |
|---|----------------------|
| 1. Wear and tear, in % | 5. Proportional |
| 2. Period of use, in years | 6. Cumulative |
| 3. Actual | 7. Regressive |
| 4. According to amortization norms, using the method: | 8. Double regressive |

At the moment they are written off, modern machines possess a comparatively high residual value for their units and parts which are suitable for further operation or for restoration. The regressive methods for computing amortization make it possible to take this into account in the form of a remnant of the initial value which was not repaid by means of amortization. Thus a negative feature of the regressive methods (impossibility of repayment for the entire initial cost) is transformed into the opposite state and consideration of the residual value of machines which were written off is ensured.

The methods for computing amortization and the norms calculated on their basis must take into account the technical-economic characteristics of modern agricultural machines, the conditions for their use, technical servicing and repair operations. In addition to their principal function, correctly computed amortization norms ensure the economic conditions required for the timely reproduction of agricultural equipment, with the rules for the twofold movement of use value and general value being observed, and they make it possible to calculate in a sound manner the cost of mechanized operations and output and to create conditions for an equivalent exchange of defective equipment at repair points in conformity with the cost accounting requirements.

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POLICY, ORGANIZATION

TRUST OFFICIAL DRAWS FIRE OVER RESTRUCTURING INITIATIVES

Leningrad LENINGRADSKAYA PRAVDA in Russian 21 Jan 87 pp 1-2

[Article by P. Rashevskiy under the rubric "Restructuring: the Degree of Risk": "What Will We Find When We Get Where We're Going?"; first paragraph is source introduction]

[Text] As you read this RSFSR Gosstroy order, it is quite natural to begin thinking that the managers of the Leningrad Engineering and Construction Research Trust have made extremely serious mistakes, and that the situation at the trust is critical. Judge for yourself. Manager G.F. Goryachev was issued a strict reprimand "for serious production irregularities at the trust, and for lack of discipline." In fact, the reprimand was even qualified with the following comment: "Comrade Goryachev actually deserves to be relieved of his duties."

What is going on here; what is behind this order? After all, the trust's indicators show a steady increase in performance over the last few years: profitability has risen annually, quality has improved, and a system of resource conservation has taken root. As a matter of fact, all this led to the trust's being recognized as one of the socialist competition victors at the association it is part of.

And the trust's success was not just the result of some fortunate turn of events. As far back as 1977, the trust began developing a construction-related engineering research quality control system that was initiated by Goryachev and organized by the party organization.

The first step was to tighten quality control. Everybody was evaluated at every stage of their work, with the high criteria and standards prescribed by the trust serving as the bottom line. When tallying the scores from competition, quality was the key indicator.

Cost accounting [khozyaystvennyy raschet] became part of the system. Literally every meter of drill pipe had to be accounted for, while responsibility for how effectively equipment and material were used was the domain not only of section chiefs, as had been the case previously, but of party and group leaders and rank and file workers.

And thus, it was not without reason that in 1984 the RSFSR Gosstroy officially decided to: "generalize the experience of the trust, and give it regular professional and methodological assistance."

Encouraged by this, the trust continued the work it had started, with performance reaching levels that were to all appearances quite satisfactory. We need only mention here that last year alone output increased by more than 10 percent, while labor productivity went up by almost 7.5 percent.

As for quality, I am in complete agreement with T.A. Larinaya and V.Ye. Biryukov, two USSR Gosstroy Construction-Related Engineering Research and Development Institute experts, who said: "The level of engineering research quality reached by the trust is among the greatest accomplishments of the country's research institutions."

So what was the reason for the cruel and peremptory order of 1986? To find the answer, let us go back two years to the period when the RSFSR Gosstroy honored the trust.

Everyone at the trust understood that only the first step had been taken, and that a key question had not yet been answered: who would be evaluating production and, hence, performance of the new system?

Previously, the following system had prevailed. If some project--be it a factory, poultry farm, or apartment building--were given a good rating, then it meant the research that went into the project also was given a good rating, even though this rating was not always a reflection of the true state of affairs. At the same time, if the actual designers did a poor job of setting up a new factory or put up a building that was not up to standards, not only the designers, but the researchers as well would be given a poor rating and denied the appropriate award, regardless of how well the latter had done their part of the job.

The trust's proposals as regarded this situation can be summed up as follows. The performance of the trust should be evaluated by the client, who would pay a bonus if the work done was outstanding. Doesn't this seem reasonable? In response to this question, Yu.I. Novikov, head of the operations department at the local office of the USSR Stroybank [construction bank], answered: "From an economic standpoint, it would definitely make more sense for us to use this system."

Of course it would. Designers, who are generally the agency buying the research work, would feel a greater sense of responsibility when receiving work done for them, and would become more demanding. And the researchers would then have a direct interest in doing high quality work and in increasing the amount of incentive money available to motivate superior quality work.

But we should remember that Novikov stressed "from an economic standpoint." The idea ran into serious obstacles in the form of obsolete laws making it impossible to act without the intervention of higher authorities, including the RSFSR Gosstroy. The heads of the trust then appealed to the latter, reminding them of the promised regular assistance, but received nothing more

than prolonged silence in response. No one actually said no, but no one said yes either.

So what were they supposed to do? The trust began getting the buyers of its services to evaluate them without waiting for official approval. In addition, they succeeded in coming to agreements with a number of them vis-a-vis bonuses for outstanding work. This too was in violation of the existing rules. In other words, the trust inaugurated a sort of experiment without first obtaining official permission.

A.Ye. Maryanichev, secretary of the trust party buro, admitted to me that: "We didn't have any other alternative."

Let us take a closer look at the trust's proposals. What was the reasoning behind them: a desire to make themselves look better; or an attempt to obtain special concessions for themselves? Hardly. Their objective was considerably different, in fact. What they wanted to do was perform with more enthusiasm, to produce a better quality product and work more efficiently. And the reason for this is nothing more than true professionalism and genuine concern for their job. This is what made them so willing to take chances. After all, unless you want to progress at a snail's pace, you have to reject half-steps forward and make major and sometimes radical decisions.

The heads of the trust took risks above and beyond the breaking of a few rules. They actually made things more difficult for themselves and took on harder tasks, since they were aware that they would not get outstanding ratings and bonuses without earning them. After all, they could hardly expect the designers to start handing out money right and left unless quality really was outstanding.

Other questions also remained to be answered. For example, would it be possible to take the steps necessary for improving quality in the absence of the requisite specialized high-performance equipment and tools? Or, would the new demands intimidate the personnel they were placed on, since the latter would have to work harder in a profession that does not have that much prestige in the first place? And finally, wouldn't the bonuses affect the labor productivity-wage balance and, in turn, the performance of the collective? The trust had considered all these possibilities before making its bold step.

And what about the other side's point of view. The trust was promised assistance as long as it introduced items and ideas which, while not in effect at the trust itself, were well-known and well-worn. Approved by someone at sometime, these ideas included internal operational cost accounting and a quality control system. But as soon as the trust crossed the line into the unfamiliar and unknown, they heard the following: "What are we going to find when we get where we're going?" The question arose not so much out of a desire to solve problems quickly as out of fear of anything new.

The truth is, higher authorities were in need of more boldness and decisiveness, since they also felt the trust was undertaking too risky a proposition. They said they were concerned, for example, about the readiness

of the 30 or so other research trusts for such changes, as well as the possibility that the trust would become too independent, thus resulting in changes in its relations with the association and its chief.

But boldness was not a quality the authorities possessed. Instead of taking a decisive step forward, they settled for merely shuffling a little. In 1986, it was decided that all the trusts in the Stroyizyskaniye [Construction Research] Association would have quality evaluated by their clients. The issue of offering incentives for high quality work remained unresolved. What happened was that the initiative of the trust was recognized, but it was not given a green light, since it would have been impossible to permit true business relations between buyer and seller without providing the economic resources necessary to back them up.

Auditors also made a number of visits to the trust in this connection: initially in 1985, and later in 1986, the RSFSR Gosstroy Departmental Control Agency conducted a review of operations at the trust. And did they find any problems? I'm afraid they did. Problem areas included research planning, contract documentation writing, and wage payments. We should note, by the way, that many of these have already been taken care of.

But these individual problems at the trust were not what prompted the formation of a review commission, which focused only on the system of offering bonuses for outstanding work. In the wake of its 1985 audit, the commission banned such payments, although the trust stuck to its guns. Then in 1986 another commission was put together and another order was issued, this one stressing: "Goryachev did not undertake the appropriate measures, and continued instead to allow bonus payments for outstanding work to be paid by clients, thus violating existing regulations."

Of course it is far from easy to dispose of existing regulations and adopt new standards. Before venturing such a step, it is necessary to first obtain some practical experience with the new system and carefully analyze the advantages and disadvantages of what will be replacing the old system. But no one has done this. The ban stands as the only evidence of any effort to deal with the problem.

But what did the trust think about all this? They felt that the authorities' "regular assistance," as the 1984 RSFSR Gosstroy decision put it, was nothing more than an attempt to kill initiative which, I would like to underscore, was not the exclusive domain of Goryachev or the party organization, but of the entire collective.

The trust's response to all this was not exactly mild. Neither the party bureau nor the party assembly performed an official review of the situation or the issue of how much the director or other communist leaders were responsible for the problems the commission had brought to light. And this was despite the fact that a strict interpretation of the party rules militated in favor of precisely this course of action.

But to their credit, the trust's collective did not waste time in being irritated at the authorities. Last year, at the initiative of the party

organization, personnel became more demanding in their attitude toward the quality of work done under field conditions and toward their interpretation of the cost accounting mechanism within their collective.

And a new trend took shape. The trust decided to create integrated brigades made up of experts in operations under field conditions and the personnel doing the analytical part of the job. Moreover, the contract system was adopted as the model on which brigade operations would be based.

This new system has now been tested under the most severe conditions at Slavutuch, where studies on the city in which Chernobyl AES personnel will live have been carried out. The entire project, which traditional techniques said would take almost a year, was finished in three months.

I would especially like to point out that it is not far from the business relations based on high quality and internal cost accounting that the trust is seeking to self financing and self reimbursement of expenses. What the trust has done represents a serious step in the direction of reform.

And changes are critically needed. If we look at this same Leningrad trust, we see that it has pushed quality up. Yet we are looking at the level of quality only from the USSR perspective. From the world perspective, quality here is still lagging far behind.

So what should we do? Wait for another commission? Probably it would be better to make a different decision and let the Leningrad Engineering and Construction Research Trust carry out its experiment officially. Regardless of the findings, at least it would put the argument over the validity or invalidity of the new ideas on a solid professional foundation.

V.A. Romanov, first secretary of the CPSU Oktyabrskiy raykom, told me: "It was precisely for this reason that we wrote to the RSFSR Gosstroy, asking them to take a close look at the situation and support the trust's initiative."

The answer came recently. They were informed by Yu.K. Bukin, deputy chairman of the RSFSR Gosstroy, that: "The RSFSR Gosstroy cannot agree with your viewpoint that the illegal actions of the trust officials were justified."

But the issue never was to relieve these officials of responsibility! It was simply to keep us from throwing out the baby with the bath water.

I recently had the opportunity to visit the city of Slantsy. And during my talks with the miners there, the conversation shifted to the question of whether there were plans to get rid of whole mountains of limestone gangue extracted along with the shale. This gangue has a negative impact on the environment and covers hectares of land.

The reason I remember this is that a certain amount of gangue is holding back our current program of reform. That is, apathy, lack of a sense of responsibility, red tape, and fear of bold decisions are all keeping us from moving forward. We have not yet moved all the obstacles to reform aside.

So, even though the Leningrad trust did not get to prove all the advantages of the system it inaugurated, its initiative has not been blunted, and the energy and enthusiasm of the personnel there have not given way to apathy and loss of faith in the program of reforms.

LABOR

EFFECT OF UNEARNED INCOME ABUSES ON LABOR ANALYZED

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[Article by A. Shokhin, candidate of economic sciences, under the rubric "Labor Productivity and Labor Activeness": "The Struggle Against Unearned Incomes: The Social and Economic Aspects"]

[Text] In the decisions on the intensification of the struggle against unearned incomes, emphasis has been placed on the necessity of an in-depth study of the social, economic, legal and other aspects of this phenomenon. The struggle against unearned incomes is regarded in broad terms by the party and the state as the elimination of all forms of deviations from the socialist principles of distribution and of the reasons which generate them. This is not a short-term campaign, explainable by some kind of "splash" from the activities of persons who are deriving such incomes. Rather, it is an important and permanent function of the socialist state. Regardless of the extent and size of unearned incomes, the struggle against them should be carried out actively and uncompromisingly. Indeed, their existence leads to the violation of the principles of social justice and deforms the moral principles, as well as the labor ethics, of our society.

UNEARNED INCOMES ARE A PHENOMENON ALIEN TO THE NATURE OF SOCIALISM

In the CPSU Central Committee's Political Report to the 27th Party Congress, it was noted that the strict putting into practice of the principle of social justice is an important condition for the unity of the people, the political stability of society and the dynamism of development.

Under socialism, the criterion of social justice is expressed in the fundamental principle: "From each according to his ability, to each according to his labor." Socialism guarantees to each member of society conditions for the formation, development and use of capabilities in the process of socially organized labor activities. At the same time, the well-being and social status of each worker are determined by his real contribution to the augmentation of public property.

Consequently, the problem of realizing the principle of social justice has two aspects. The first is associated with the strengthening of the system of social guarantees and with the formation and realization of the peoples'

capabilities and, first and foremost, the capabilities for labor. Among these guarantees are general access to and the high quality of education, of health care, of the services of cultural institutions, the ensurance of a socially normal level of satisfaction of needs, including concern about the aged and the material support of families with children, the assignment of work commensurate with the obtained education and skills, with creative potential, with mastery and with one's vocation (of course, also taking into consideration social needs). The second aspect of the problem is conditioned by the necessity of ensuring the conformity of labor, pay and consumption measures, of ensuring the elimination of any kind of deviation from the principles inherent in socialism for the distribution of income and goods and the strengthening of the labor bases for the way of life of all social groups and of every member of society.

The observance of the socialist principle for distribution and strict monitoring of the measures for labor and consumption in the most direct manner affect the interest of the worker in labor and the prestige of highly productive labor in public production. Indeed, deviations from the principles of just distribution become apparent precisely when, within the framework of the publically organized wage system on the one hand, there arises among a portion of the workers a striving to obtain incomes exceeding the results of labor and on the other hand, there is an intensification of the "overflow" of labor activism beyond the limits of publically organized production, be it subsidiary farming or activities for deriving unearned incomes. All this leads to a weakening of the stimuli for labor in publically organized production and does not evoke the corresponding increase in the labor contribution in accordance with the degree of their growth.

Unearned incomes are an extreme form of deviation from the socialist principles for distribution (and at the same time, from the principles of social justice), which noticeably weakens the public labor activism of the workers. It would seem to be completely natural to relate to wages all forms of goods obtained through the labor activities of their recipient. But then the incomes of public dependents (I am talking about retirees, students and recipients of other payments from the public consumption funds) do not fall into the category of wages. In return, in this case, it is logical to relate to wages the incomes from illegal labor activities. Consequently, it is impossible to acknowledge as a criterion merely the fact of the application of labor efforts in order to receive incomes. The labor nature of income under socialism is the result of socially useful and socially recognized activities. In addition, it becomes apparent through conformity with the principles prevalent in society of the social justice of distribution. On this basis, not only will wages and other forms of distribution according to labor be considered to be labor incomes, but so will payments from the public consumption funds.

The functioning, systematically state organized system of distribution (of the derivation, redistribution and the conditions for the realization) of the peoples' incomes on its own basis ensures the conformity of the existing conditions for the derivation and realization of incomes with the laws and principles inherent in a socialist society.

At the same time, the entire totality of the distribution processes is not encompassed by direct state regulation. First and foremost, it is necessary to relate the derivation of incomes derived from individual labor activities outside of publically organized production to the distribution relations that are not regulated (completely or partially) by the state, as well as the unorganized redistribution of incomes between the different groups of the population. Of course, the very fact of obtaining incomes beyond the limits of publically organized production is not a basis for their negative evaluation. But at the same time, it must be acknowledged that the uncontrolled distribution of incomes serves as a breeding ground for all kinds of violations of just distribution. Sometimes the sources of incomes can be ones which are incompatible not only with the laws of socialist distribution, but also with the laws of socialist law and order. At the very same time and within the framework of the publically organized distribution system, there arise deviations from the socialist principles either as a consequence of the shortcomings of the management mechanism; or because one or another historically emergent income ceases to meet contemporary requirements; or because of economic disproportions which have a negative effect on the distribution system, or because of shortcomings in the organization of the very distribution relations, the weakening of control and the inequalities of the forms for regulating incomes.

All this makes it possible to talk about the existence of all kinds of deviations from the socialist principles of distribution. In instances where incomes are associated with the mercenary interests of their recipient and actions are generated which violate the laws, they are usually talking about unearned incomes. To the latter belong those incomes which are derived: on the basis of illegal forms for their redistribution between the individual groups of the populace; the illegal removal of state resources from the state; and all kinds of illegal production activities.

The typical forms of illegal redistribution of incomes are speculation, the formula for which is purchasing for the sake of selling (the sale of goods at prices exceeding the price list) and bribery (the use of one's own work position for the purpose of obtaining additional incomes). The law now relates to grafters "who take bribes" for their own personal (official) status (the possibility of making or not making a decision in favor of the bribe-giver). In our opinion, it is necessary to add to the number of grafters, "those who take bribes" for their own professional status (doctors, teachers, pre-school instructors at children's institutions and the like) and in this instance the bribes are usually taken for the fulfillment of professional obligations at the normal level, and sometimes simply in expectation (frequently unjustifiable) of such fulfillment.

A specific form of illegal redistribution of the real incomes fund is the exchange of goods and services, which does not presuppose a profit that is realizable as speculative income or a bribe or the like. Here the formulas "you scratch my back and I will scratch yours" and "tit for tat" are active. This form creates the conditions for a much higher level of satisfaction of demands for the people who have access to scarce products or the opportunity of rendering some kind of service to another (frequently in contradiction to the law).

A special place in the derivation of incomes of an unearned nature is occupied by the illegal removal of state resources from the state. A form of such use of public resources is the embezzlement of socialist property, including the activities of the small-scale pilferers and the larger scale plunderers of socialist property. The embezzlements are frequently assisted by the unbalanced and disconnected, according to the individual elements, provision of resources to enterprises, their striving for "concealment of reserves" and the lack of actual stimuli for strenuous work. Hence, we have the mismanagement, the poor monitoring and inventorying of material valuables and their squandering by the managers of such enterprises, which create not only the economic basis for embezzlements but also the favorable social and economic situation (wherein "it is all the same, stuff will disappear").

Within the framework of publically organizable production, incomes can be derived in accordance with legal channels, by violation of the established procedure for inventorying and accounting. We are talking about a fictitious value as a source for obtaining unearned incomes as a result of the falsified entries. Due to the movement of the fictitious values, the opportunity appears for obtaining unearned incomes via wages, the bonus system and the material incentives funds.

Another form for the use of fictitious value is the sale of resources obtained as a result of deviations from the established norms and standards (a worsening of quality, the output of incomplete or substandard products, "technological" machinations, resorting and the like). The embezzlement of socialist property and the movement of fictitious values are a basis not taken into account by the state inventorying for the production of material goods and services.

Even the most concise description of illegal unearned incomes makes clear the necessity for an active struggle against them. But it appears even more clearly outlined during the examination of their economic and social consequences. The economic consequences of unearned incomes are manifested in the direct material loss and the deficient economic effect.

The removal of resources from the state inflicts direct economic harm. The majority of forms for obtaining unearned incomes is conditioned on similar removals which take various forms: the appropriation of profit by the people, the embezzlement of socialist property, the use of public resources for illegal economic activities.

The deficient economic effect is associated, first and foremost, with the deformation of the distribution system, which becomes apparent in the fact that:

within the framework of publically organized wage system, there is reinforcement of the stimuli for obtaining incomes, which increase the results of labor;

there is an increase in the importance of activities for self-service, which makes possible economizing the family's monetary expenditures for certain items;

there is an increase in the role of "status" factors and not result-yielding factors in the distribution of goods;

an upheaval occurs in the system of stimuli in the area of unearned incomes, associated with production activities.

all this weakens the stimuli for highly productive publically organized labor and is not conducive to the increasing of the final economic results in accordance with the degree of quantitative growth of wages.

Both named economic consequences are closely associated with one another: the direct economic loss to a great degree is inflicted as a consequence of inequities and the inadequate effectiveness of the publically organized system for stimulating socially useful, efficient and quality labor. Therefore, the most important task for the coming years will be to adjust and strengthen the system of stimuli for labor.

The social consequences of unearned incomes need to be examined first of all in light of the problems they generate in the process of solving one of the basic program tasks of our society--the subsequent elimination of the substantial social and economic differences between people and the achieving of the social homogeneity of society.

Attention was paid to this circumstance in the CPSU Central Committee's Political Report to the 27th Party Congress: "Today we should recognize that as a consequence of weakening control and a number of other reasons, there have appeared groups of people with clearly expressed proprietary aspirations and a scornful attitude towards the public interests." (1)

It must be noted in particular that, despite the scarcity of their numbers, the indicated circle of people possesses a sufficiently high level of activism aimed to a significant degree at involving in the activities for extracting unearned incomes the work force, the "dealers," and officials, including workers in the resource distribution and law enforcement organs, in order to create conditions favorable for embezzlement, speculation and falsified entries (maintaining an artificial shortage of goods and services, counteracting the radical improvement of the management mechanism and so on). Thus, the interests generated by the social structure inherent to socialism are opposed by the interests arising in connection with the existence of unearned incomes.

The social consequence is the specific influence of negative redistribution attitudes on territorial social ties. Thus, the possibilities of appropriating the differential and particularly exclusive profit, derivable during the sale of products from private subsidiary farming, are determined by the favorable natural climatic conditions of the individual regions of the country, which gives a territorial aspect to the social and economic processes associated with the redistribution of incomes.

It is necessary to relate to the group of social consequences the deformation of the demand pattern, the spreading of prestige consumption, the acquisition

drive, and the non-industrious way of life. The redistribution processes associated with the unearned incomes are expanding the base for the penetration of the consumer ideology and of relapses of petty bourgeois psychology.

In party and state resolutions, a broad set of measures have been outlined for the intensification of the struggle against the derivation of illegal unearned incomes and aimed at eliminating the reasons which generate such types of activities, at toughening the legal actions against the recipients of illegal unearned incomes and at forming an irreconcilable attitude towards them.

Among the set of measures for the first group are the strengthening of the principle of distribution according to labor, the overcoming of the scarcity in a number of goods and services, the elimination of "profit" incomes and the regulation of individual labor activities. In addition, of great importance here is the elimination of the reasons which directly generate illegal forms of enrichment. Thus, the broad set of measures for improving the organization of original inventory and accounting and for stopping falsified entries has been worked out.

The subsequent elimination of the reasons which "nourish" the illegal activities, of course, does not mean that the pull towards the derivation of unearned incomes will be sharply diminished among those who are actively involved in these activities currently and among whom the soul has been devoured by the rust of avarice. Therefore, additional strict measures have been provided for legal action aimed at stopping the activities of grafters, speculators, bribe-takers, state property embezzlers, pilferers and other lovers of easy profit at the expense of society.

ELIMINATING OTHER DEVIATIONS FROM THE SOCIALIST PRINCIPLES OF DISTRIBUTION

The main direction of the struggle against unearned incomes is the creation of the prerequisites for a more complete development of the capabilities of the people in public labor and the expansion of the opportunities for each member of society to increase his own income through an increase in his own labor contribution to public production, i.e., through increasing labor incomes.

On this basis it is possible to transform the forms of labor activism which currently are of a socially unacceptable and illegal nature into a channel that is not only legal, but socially necessary. In this connection, in the forefront are the tasks of the subsequent realization of the socialist principles of distribution and the elimination of all forms of deviations from them. It is no accident that in the new edition of the party program, the improvement of distribution attitudes is associated with the creation of those conditions under which the "distribution mechanism would serve as a reliable barrier against unearned incomes and wage leveling--against everything that contradicts the norms and principles of the socialist society." (2)

Of key importance in the realization of such a course is the subsequent embodiment in practice of the stimulation of the principle of socialist distribution according to labor, and a "cleansing" of the wage system of elements of "unearned" wages. The basis of the mechanism for their derivation

is the excessive compensation load for wages, which is associated with entrusting it with the functions for the mitigation of a number of economic problems and disproportions (work force shortage, the low rates of transformations in the sphere of labor, etc.). The result is shortcomings in the operating management mechanism with its orientation to volumetrical and intermediate indices and planning from the attained level and so on.

The whole complex of processes which influence the derivation of "unearned" wages is causing a disruption of the proportions of public production (the more rapid growth of wages in comparison to the final economic result) and a redistribution of the total fund for wages among the individual categories of workers. At the same time there is a reduction in the possibilities for stimulating the final economic results and there is an unjustified growth in the wages for workers in short-handed professions, in the surplus work force involved in production and in the producers of production that does not satisfy public demands, etc. All this makes it possible to characterize the given complex of processes for the derivation of incomes as a distinctive form for their distribution and as unearned incomes which can be characterized with a specific degree of conventionality as non-labor wages (non-labor with respect to the law of socialist distribution according to labor).

The growth of wages which outstrip the increase in the labor contribution has negative consequences not only economic in nature, but also moral. Thanks to it, conditions arise for the appearance of consumer pretensions which exceed the limits of economic resources for the expansion of production. There is a weakening of the stimuli for increasing labor activism and the growth of professional and skill levels, inasmuch as it is easier to ensure the increase in wages not by means of the complication of work and the growth of labor efficiency, but rather by means of constant pressure on the part of the factors for the compensational growth of wages.

The disproportions in pay that emerge under these conditions (the lag between the wages of engineering and technical workers and those of blue-collar workers, the different types of limits and the limiting of the growth of wages during the forced increase of its minimum rates, etc.) form a distorted image of social justice, which frequently coincides with the idea of a leveling distribution. Associated with these processes is a lowering of the workers' receptivity to material stimulation which generates difficulties in the use of economic methods for the intensification of production. And what is more, sometimes a negative attitude towards genuine outstanding production workers is formed.

In conformity with the decisions of the 27th CPSU Congress, a broad program of measures has been outlined for the subsequent realization of the principle of distribution according to labor. As of 1987, wage reform will start to be implemented in the industrial sphere of the economy, in the course of which the basic elements of the system for administering wages will be reorganized--the wage rates and salaries, bonus pay, differentials and compensation wages. In the process of the dissemination of the new management methods, the principles for the derivation of wage funds are being improved. All this will promote the stirring up of the stimulating functions of distribution according to labor and will enhance the prestige of the earned ruble.

Heated discussions usually flare up around the incomes of persons engaged in individual labor activities, subsidiary farming and migratory seasonal work. Are they earned incomes or not? Analysis indicates that on their own basis they are earned incomes. And the recently adopted "USSR Law Concerning Individual Labor Activities" confirms this. But this does not mean that an element of "unearned" incomes can not be in them. The fact is that incomes in the sphere of individual labor activities are set according to wage standards that differ from those of the state and cooperative sectors of the economic system.

The activities proceeding outside the public sector of the economy are being carried out, as it were, in its pores, fulfilling that vacuum which is formed due to the lack of resources in society or due to the inadequate efficiency or economic unprofitableness of the public organization of certain secondary types of production. In connection with this, for the indicated types of activities, highly profitable supply and demand market conditions are being created and a special mechanism for setting prices for the products produced here is being formed. The supply reacts to the intensification of demand primarily by prices and not by the expansion of the scope of production, i.e., the conditions for the sale of goods produced in the sphere of individual production are such that the prices are set at a significantly higher level than necessary for the recovery of labor expenditures.

Such a position is promoted by the inadequate counteraction on the part of production. At the very same time, for all practical purposes, there is a lack of opportunity for the expansion of production due to an increase in the number of persons carrying out individual labor activities.

The goods produced outside the public sector of the economy can be sold at state or collective prices. However, the distribution pattern for net income here is different. In it there is a lack of the elements of reproduction tie with public expenditures. To put it more accurately: the very economic mechanism for pooling expenses and distributing earnings does not reflect a connection with the public conditions of their receipt and does not provide for the inclusion of any part of income received outside the public sector in the financing for general economic and social expenditures. It is precisely because of this that even with a much lower labor productivity level it frequently yields a much higher income than labor in the public sector.

It must be taken into consideration that for a number of public resources the state has set socially understated (beneficial for the populace) prices. This applies to the use of food resources in private farms. Socially understated retail prices have been established for many products used for raising cattle, poultry, bees, fur-bearing animals, etc. (for meat, fish, cod liver oil, cottage cheese, potatoes, medicine, vitamins, etc.). Expenditures to acquire these types of public resources are minimal compared to the effect obtained from their use.

The unpaid utilization of public (general) resources also occurs in the receipt of rental incomes.

As a result of the effect of these factors, labor activities outside of publically organized production turn out to be not only a form of the redistribution of incomes between individual groups of the populace but also bring in above-average incomes for certain groups of people engaged in individual production by means of unfounded redistribution.

It must be noted that in contrast to illegal unearned incomes which emerge as a result of the illegal initiatives of their recipients, "above-average incomes" in the sphere of subsidiary individual labor activities appear to a large degree as a consequence of the inadequately efficient organization of one or another economic process and therefore can not be blamed on their recipients in most cases. At the very same time, the shortcomings of such activities for a socialist society make it impossible to let the matter take its own course.

The main one is the "overflowing" of labor activism beyond the limits of publically organized production and the lowering of its efficiency. At the same time, the work loads of the most active part of the population increases (indeed, individual labor activities are conducted as a rule on the principles of repeated employment. It must not be forgotten that here there may be elements of illegal unearned incomes, for the animating source for many types of labor activities outside the public sector are the various types of illegal means for deriving resources. All this requires the serious improvement of, the regulation of and the setting right of individual labor activities. This is why the party is paying a lot of attention to the effective regulation of individual labor activities in the system of measures for intensifying the struggle against unearned incomes. "The USSR Law Regarding Individual Labor Activities" has been called upon to solve this problem. This law defines precisely and expands significantly the list of permitted types of individual labor activities. The law names outright more than 30 types of such small industries and services. This list can be added to locally.

Measures have been provided for the regulation of the status of persons engaged in individual labor activities. This regulation is aimed at:

defining the contingent of persons who can engage in individual labor activities (this right has been granted to adult citizens who participate in public production to use in their spare time, to housewives, to retirees, to invalids, to students and to schoolchildren, and in some instances as provided for by law--to other citizens who do not participate in public production);

regulation of the procedure for engaging in individual labor activities (citizens who have expressed a desire to engage in individual labor activities should obtain the corresponding permission from local authorities--a registration certificate or obtain a license from the financial organs); the setting right of financial interrelations for persons engaged in individual labor activities with the state by means of a tax system (the purpose of such a set-up is to ensure the conformity of incomes from the given activities with the labor expenditures and the principle of social justice).

It should be noted that the setting right of the status of individual labor activities also pursues the goal, if it can be so expressed, of state

protection of the interests of people engaged in it against local extremes, which still exist, unfortunately. An important measure in this connection is the procedure provided for by the law for appealing decisions regarding the refusal of the local soviet of people's deputies to grant permission to engage in individual labor activities to the ispolkom of the superior soviet of people's deputies, to the council of ministers of an autonomous republic and to the council of ministers of a union republic which does not have oblast level divisions, as well as the right granted to the local organs to determine the types of individual labor activities which do not require permission to be engaged in. All these measures should lead to a limited "building in" of the forms of individual labor activities into public production, transforming them into a help, a supplement to the honest work in the state and cooperative enterprises, and to an intolerance for illegal or unpaid use of public resources.

For the purpose of increasing the effectiveness of the socialist system of distribution it is necessary to restrict the opportunities for social maintenance [parasitism] arising from "rental" receipts. The fact is that within the framework of existing system of distribution the opportunity exists for obtaining incomes, as they say, without lifting a finger. Among the category of "rental" incomes it is possible, for example, to refer to the differential rent, given to the possessors of choicely located parcels of land (in the southern regions, near large cities and in the resort areas).

The unfounded redistribution of incomes can arise as a result of the use, for mercenary purposes, of personal property or of various property in the possession of the citizens, say, as the result of renting out city apartments or suburban homes. In these instances the income is derived from the difference between the "market" price for these goods and their low cost for the possessor. It can happen that an income has roots in the past--we are talking about inheritance. Receipts in the form of interest according to deposits in savings banks are partially "rental" in nature.

Without dwelling in detail on specific methods for weakening the "rental" nature of the individual types of incomes, it should be noted that in all the instances we are not talking about the elimination of one or another of them, but rather about setting right historically established incomes of the population that do not completely meet contemporary requirements. For example, the question of inheritance. At the 27th CPSU Congress a declaration was made about the necessity of introducing a progressive tax on inheritances. The accumulation of belongings and savings is a process that conforms with the law, but it should not deform the principle of distribution according to labor. To prevent this it is necessary to have an economically significant progressive tax on inheritances. The tax rates should progress according to the extent of the inheritance amount in order to preclude the possession of belongings and monetary resources not acquired through one's own labor that would make it possible to live for a prolonged period of time in comfort.

When talking about the necessity of eliminating differential rent, then again, it is not a question of reducing the incomes of persons engaged in real estate transactions, but rather of setting right their interrelations with the state; disclosure of the conditions for management of parcels which differ according

to location and fertility; ensuring minimal efficiency in the use of the land by all the possessors of parcels.

This is also the way it is with interest on deposits--not to abolish interest as such, but rather to make it an effective instrument of the social and economic policies. What is needed in order to do this? Perhaps, it would be advisable to introduce a system of special purpose deposits, stimulated by differentiated interest rates (deposits for construction and acquiring housing, for the purchase of expensive goods, etc.).

The struggle against unearned incomes and the elimination of all forms of deviation from the socialist principles of distribution will ensure an increase in the labor activism of the Soviet people, a stirring up of the human factor in economic development and the successful fulfillment of the social program outlined by the 27th CPSU Congress.

FOOTNOTES

1. "Materialy XXVII syezda Kommunisticheskoy partii Sovetskogo Soyuza" [Materials on the 27th CPSU Congress], Moscow, Politizdat, 1986, pp 46-47.

2. "Materialy..." op. cit., p 147.

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EDUCATION

PARTY, GOVERNMENT DECREE ON TRAINING IN SCIENCES

PM311151 Moscow PRAVDA in Russian 26 Mar 87 First Edition pp 1-2

[Unattributed report on CPSU Central Committee and USSR Council of Ministers decree "On Measures to Improve the Training and Use of Science Teachers and Scientific Cadres"]

[Text] The CPSU Central Committee and USSR Council of Ministers have adopted a decree "On Measures to Improve the Training and Use of Science Teachers and Scientific Cadres."

The CPSU Central Committee and USSR Council of Ministers have obliged the union republic communist party central committees, party kraykoms and obkoms, union republic councils of ministers, the USSR Ministry of Higher and Secondary Specialized Education, ministries and departments, higher educational establishments, scientific institutions and organizations, in accordance with the decisions of the 27th CPSU Congress and the CPSU Central Committee January (1987) Plenum and the tasks of accelerating the country's socioeconomic development, to ensure the fundamental improvement of the make-up of science teacher and scientific cadres. Existing grave shortcomings in the selection, placement, and use of professors, teachers, and scientific assistants must be eliminated and the demands made on them must be increased. Favorable conditions must be created for the creative activity of teachers and scientific assistants and the fullest revelation of the capabilities of young science teacher cadres.

The VUZ and scientific institution workers, the decree stresses, must be distinguished by their profound theoretical training, broad erudition, dialectical materialist world outlook, creative attitude toward teaching and scientific research work, lofty moral-political qualities, and active civic stance.

The task has been set of implementing the restructuring of the training of science teachers and scientific cadres, regarding them as an inextricable part of the unified system of continuous education in the country. There must be a resolute improvement in work in organizing the improvement of teachers' qualifications on the basis of combining theoretical and practical training.

The USSR Ministry of Higher and Secondary Specialized Education and the USSR Academy of Sciences have been instructed to restructure the activity of postgraduate study [aspirantura] as the main form of training cadres for independent scientific and pedagogical work. They must eliminate the serious shortcomings existing in the work of postgraduate students and considerably improve the standard of postgraduate students' theoretical, special, and ideological training. To this end it has been deemed necessary:

together with the in-depth general theoretical training of postgraduates and science degree research students [soiskateli uchenoy stepeni] in special disciplines, Marxist-Leninist philosophy, and foreign languages, to provide also for the study of pedagogics, psychology, economics, the use of computer technology, mathematical modeling methods, and other disciplines taking into account the special training of postgraduate students and research students with their taking of the relevant examinations at their place of study;

to introduce for people who have successfully completed a postgraduate course of study the title "researcher" in the appropriate speciality (engineer-researcher, economist-researcher, and others) with the presentation of a diploma and the granting of privileges when they hold posts requiring an increased level of training. It must be established that people who have completed a full course of postgraduate study with a break (without a break) from production work or within the research student system and who have performed independent scientific research work are accepted to defend a dissertation;

to insure the preferential development of postgraduate study with a break from production, substantially enhancing its effectiveness. The training of science teachers and scientific cadres must be concentrated in VUZes and scientific institutions and organizations with highly qualified cadres and a modern research laboratory base;

to revise the existing practice of selecting postgraduate students, encouraging an intake of able young people, primarily specialists with creative achievements, and also VUZ graduates following recommendations from VUZ councils. Postgraduate posts must be filled on the basis of selection by competition. People with experience of teaching or research work should be accepted for postgraduate study by correspondence course. The study time of those who have completed a postgraduate studentship should be included in their science teaching record;

to basically ensure the purposive training of postgraduate students. It must be established that the purposive training of postgraduate students is implemented on the basis of orders from enterprises, institutions, and organizations which have sent them for training. Where necessary people who take up purposive postgraduate study must be given a preliminary period of industrial training of up to 12 months as trainee researchers in the organization at the place of their future postgraduate training while retaining their average wages which must nonetheless not exceed the grant established for postgraduate students in their first year;

to shape the subject matter for the scientific research of postgraduate students by proceeding from the requirements of the development of the national economy, science, and culture on the basis of the scientific research plans set for the VUZ or organization carrying out cadres training through the postgraduate studentship system. There must be an increase in the responsibility of leaders and scientific councils of VUZes and scientific research institutions and postgraduate students' scientific leaders for setting the subjects and ensuring the good-quality performance of dissertation works;

to enlist highly qualified national economy specialists to hold postgraduate classes. VUZ teachers must be allowed to perform this work under hourly payment terms, providing for an increase in the hourly payment fund for the purpose.

With a view to improving the training of science teacher and scientific cadres with top qualifications—doctors of sciences—and effectively working out topical problems of science, technology, and culture, the CPSU Central Committee and USSR Council of Ministers have deemed it expedient to create the system of graduate study for a doctorate as the top stage in the unified system of continuous education in the country. The USSR Ministry of Higher and Secondary Specialized Education and the USSR Academy of Sciences, with the participation of interested USSR ministries and departments, have been asked:

to organize the system of graduate study for a doctorate with a break from production work lasting for a period of up to 3 years' training at leading VUZs, scientific institutions, and organizations with highly qualified scientific cadres and the necessary research and experimental base;

to send to study for a doctorate candidates of sciences under 40 years of age with scientific achievements in their chosen field who have shown themselves to be promising science teaching workers;

to enlist where necessary as consultants for dissertation research leading scientists and specialists from unrelated organizations and to pay their labor calculated on the basis of 50 hours a year per doctorate candidate;

to provide where necessary for doctorate candidates to be sent on assignments to leading Soviet and foreign scientific centers.

A state grant is established for doctorate candidates on the scale of their former salary but no more than R300 a month. Out-of-town doctorate candidates are provided with well-appointed housing—a one-room apartment or hotel room—from the funds of the organizations sending them to study. The period of training as a doctorate candidate will be included in the scientific teaching work record.

The decree stresses that the improvement of the qualifications of specialists and leading workers in the national economy, postgraduate study, and study for a doctor's degree are the appropriate stages in post-VUZ education. The task has been set of ensuring the unity of all echelons in continuous education and the continuity of the various stages in training these cadres.

The overall leadership of the work of ministries and departments in organizing the training of candidates and doctors of sciences is assigned to the USSR State Committee for Science and Technology in conjunction with the USSR Ministry of Higher and Secondary Specialized Education.

Scientific-methodological guidance and monitoring of the activity of the system of study for candidate's and doctor's degrees and the solution of questions of instituting and closing this study at VUZs and sectorial scientific institutions and organizations have been assigned to the USSR Ministry of Higher and Secondary Specialized Education while the solution of these questions in scientific institutions of the USSR Academy of Sciences and the union republics' academies of sciences has been assigned to the USSR Academy of Sciences.

The task has been set of revising and approving the range of specialities for scientific workers in which the training of doctors and candidates of sciences must be conducted in accordance with the new list of specialities for training specialists with higher education and with a consideration for the development of the latest trends of science and technology.

The CPSU Central Committee and USSR Council of Ministers have deemed it expedient:

to revise the network of specialized councils for awarding doctor and candidate of sciences degrees attached to VUZs, scientific institutions, and science and production associations, with a view to putting this network in order, forming regional intersectorial specialized councils where necessary, and providing opportunities for the defense of dissertations on the entire range of scientific specialities, including areas where the sciences overlap;

to enhance the responsibility of the specialized councils for the scientific and practical importance of dissertation works; the responsibility of scientific subdivisions presenting works to be defended for the reliability of research and the standard of training of dissertation writers; and the responsibility of opponents and leading organizations for the scientific objectivity of their response to dissertations. Higher payment has been set for opposing candidates' and doctors' dissertations;

to simplify the procedure for submitting dissertation works to be defended and to reduce the time taken to examine them;

to improve the existing procedure for awarding academic titles. The academic titles of professor and lecturer will be awarded to VUZ workers by the USSR Ministry of Higher and Secondary Specialized Education.

The USSR Ministry of Higher and Secondary Specialized Education, the ministries and departments with VUZs, the union republic councils of ministers, and VUZ vice-chancellor's offices and party committees have been instructed:

to improve work in forming the professorial and teaching staff, to enhance the effectiveness of the system for selecting through competition the people

accepted for teaching work, and to eliminate formalism in holding competitions. In necessary cases VUZ rectors are authorized to take on a candidate for a year's trial period before he is chosen for teaching work on the basis of competition;

to introduce a system for the competitive reselection of professors and teachers and their regular certification, providing for an exacting assessment of the results of their scientific teaching activity. Demands must be stepped up on the teaching and scientific qualifications of teachers and their ideological and theoretical standard.

With the consent of the administration and the trade union committee, major national economy specialists are authorized to undertake teaching work during working hours for up to 4 hours a week while retaining their wages at their main work place.

With a view to improving the practical training of VUZ teachers, primarily in core subjects, a period of industrial training is envisaged for teachers at leading enterprises and in organizations and scientific institutions for a period of up to 1 year with a break from work while retaining their average salary. VUZ teachers sent for industrial training and to institutes and faculties for the improvement of qualifications are provided with hostel accommodation paid for by the organization sending them within the procedure laid down for postgraduate students. The cost of the return journey to the place of their industrial training (study) and per diem expenses on the journey are paid by the VUZs in which they work.

To render all-around aid in work to improve the quality of the training and educational process and to ameliorate the organization of scientific research, the USSR Ministry of Higher and Secondary Specialized Education and the ministries and departments with VUZs have been authorized to send to VUZs without a sufficient number of highly qualified teacher cadres, particularly to regions of the Far North, Siberia, and the Far East, professors and experienced lecturers for a period of up to 5 years, retaining their posts at their main workplace and 50 percent of their salary and paying the moving expenses for teachers and members of their families.

The resolution obliges the local soviet ispolkoms to provide these teachers with well appointed housing for the period of their assignment. The union republic councils of ministers, krayispolkoms, and oblispolkoms and the Moscow Gorispolkom and the Leningrad Gorispolkom will reserve these people's housing at their place of permanent residence.

With a view to encouraging the teaching labor of professorial and teacher cadres in improving the standard of training and ideological and political education of specialists, it has been deemed expedient:

to establish the honorary title "Union Republic Honored Higher School Worker";

to institute for VUZ teaching workers annual prizes of the USSR Ministry of Higher and Secondary Specialized Education for achievements in training and educational and scientific-methodological work: 20 first prizes of R1,000; 30 second prizes of R750; and 50 third prizes of R500.

The decree emphasizes that the union republic communist party central committees and the party obkoms and gorkoms must regard as a matter of paramount importance party concern for forming politically mature and professionally trained science teacher and scientific cadres in the country. Special attention must be paid to training cadres in the field of social sciences and increasing their activeness in the in-depth study of problems of society's development.

The party organizations and leaders of VUZs and scientific institutions and organizations have been set the task of ensuring the creation of an atmosphere of high exactingness, responsibility for the matter in hand, and criticism and self-criticism in the collectives. The holding of scientific debates, discussions, conferences, and seminars must be activated. A broad opportunity must be given to teachers and scientific workers to submit the results of their teaching and scientific labor for discussion by the science teacher public and to obtain a qualified, critical assessment. The training and education of science teacher and scientific cadres must be assigned to principled, exacting, highly qualified, socially active scientists.

The demand has been made to eliminate cliquishness, careerism, and mutual praise in teaching and scientific collectives. A resolute struggle must be waged against manifestations of the monopolist stance of individual people in science. People who allow a lack of scientific integrity and the violation of moral standards must be subject to public denunciation. An atmosphere of a principled attitude toward the assessment of the activity of specific teachers, scientists, and collectives must be created.

The CPSU Central Committee and USSR Council of Ministers resolution expresses the firm confidence that the party, soviet, and economic organs and the party organizations and leaders of VUZs and scientific institutions, in accordance with the modern requirements of the party's cadres policy, will ensure a fundamental improvement in work in training, selecting, and educating scientific and science teacher cadres capable of creatively resolving the tasks of accelerating the country's socioeconomic development on the basis of scientific and technical progress.

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EDUCATION

PARTY, GOVERNMENT DECREE ON SPECIALIST TRAINING

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[Unattributed report on CPSU Central Committee and USSR Council of Ministers decree "On Measures to Radically Improve the Quality of Training and Utilization of Specialists With Higher Education in the National Economy"]

[Text] The CPSU Central Committee and USSR Council of Ministers have adopted a decree "On Measures to Radically Improve the Quality of Training and Utilization of Specialists With Higher Education in the National Economy."

The decree instructs the union republic communist party central committees, party kraykoms, obkoms, and gorkoms, the USSR Ministry of Higher and Secondary Specialized Education, USSR ministries and departments, and union republic councils of ministers to adopt measures to radically improve the activity of higher educational establishments and focus the efforts of party, soviet, and economic organs and VUZ rectorates and party, trade union, and Komsomol organizations on the implementation of the 27th CPSU Congress directives pertaining to the restructuring of higher education and the demands in this area of the CPSU Central Committee January (1987) Plenum, viewing this work as one of the most urgent and important tasks in accelerating the country's socioeconomic development and implementing a modern cadre policy.

The decree emphasizes that higher educational establishments are called upon to exert a long-term and increasing influence on the acceleration of socialist society's progress, the dynamic transformation of its economy, the improvement of social relations, and the radical restructuring of all aspects of its life. They have a special role to play in developing the people's spiritual culture and galvanizing the human factor. In view of this, it is necessary to achieve new standards of quality in the training of specialists in close conjunction with a radical improvement of their utilization, to enrich the ideological, theoretical and humanitarian content of higher education and to reinforce its links with social practice. It is necessary to ensure that the training produces cadres who combine great professional competence with profound ideological conviction and a high standard of culture and civic activeness, cadres educated in the spirit of communist morality, Soviet patriotism, and socialist internationalism. It is necessary to foster in cadres the desire to constantly enrich and update their knowledge and to acquire modern economic

thinking, the skills necessary for the scientific organization of management, and the ability to tackle the tasks of scientific, technical, social, and cultural progress with initiative and responsibility.

The USSR Ministry of Higher and Secondary Specialized Education is instructed to carry out a fundamental restructuring of the teaching process and of the structure of cadre training. It is necessary to switch to training specialists with broad qualifications based on a combination of basic general scientific and professional knowledge with practically oriented training. With a view to taking fuller account of the interests of national economic sectors it is necessary, as part of the educational process, to provide students with specialized training with the help of enterprises and organizations. The demand now arises to review—after coordination with the USSR Gosplan and interested ministries and departments—the cadre training structure and to approve for the 1987/88 academic year a new list of fields in which specialists are trained at higher educational establishments, considerably reducing the number of these fields. It is necessary to constantly update the list of these fields in accordance with the needs of national economic sectors and the basic trends of scientific and technical development. New syllabuses and programs must be drawn up and introduced no later than the 1988/89 academic year.

It is planned to introduce differentiated training of specialists in terms of content and duration in accordance with the nature of their future professional activity—technological, operational, management, design, research, or other. It is also planned to organize the training of cadres for scientific establishments, design and planning organizations, scientifically intensive production establishments and enterprises' science departments on the basis of demand from these establishments, inter alia by switching students who display special scientific or technical creative abilities to individual study plans extending their overall study period to 6 years, and by introducing scientific traineeships. The list of higher educational establishments providing training for the aforementioned specialists is to be drawn up after consultation with the USSR Gosplan about the number of such establishments.

Educational establishments are to be authorized to allocate, as they see fit, up to 15 percent of teaching time in their syllabuses and training programs to cover the latest achievements in the relevant fields of science and technology and to prepare specialists for their future work.

With a view to developing the creative abilities of future specialists and intensifying individual training it is deemed necessary:

to make provision for the division of the study group into two subgroups during practical exercises, seminars, and laboratory training;

to reduce the number of compulsory lectures on full-time courses; to considerably enhance the role of independent work by students, improving its planning and organization and increasing supervision of and assistance to students by the teaching staff; to establish that pedagogic and methodological leadership of the students' independent work is part of the teachers' job, to which 12 hours per week are allocated during the first 3 years of a course and 16 hours per week during more advanced study;

to make extensive use of discussions, business games, simulation of production situations, and other active methods of study; and to develop students' scientific research work as a compulsory component of specialist training.

The CPSU Central Committee and USSR Council of Ministers take the view that the paramount duty of professors and teachers in higher education is the unswerving implementation of the Leninist principle of the unity of teaching and character-molding in the training of specialists. It is important to ensure the decisive role of the educational process in laying the spiritual foundations of the personality of members of the present-day Soviet intelligentsia, in shaping their scientific world outlook and broad horizons. It is necessary during lectures, seminars, and practical exercises to convincingly reveal the social priorities and humanitarian values of socialism and the role and place of the human factor in improving Soviet society. It is necessary at sessions of the learned councils of institutes, departments, and chairs systematically to examine the methodological aspects of the disciplines taught. It is necessary to develop students' dialectical thinking, to reveal to them the essence of phenomena in all their breadth, multiformity, and contradictions.

It is necessary to deepen the fundamental training of students and to teach all disciplines at the level of the highest achievements of modern science. It is necessary to strengthen the interdisciplinary links among the subjects taught. On the basis of the mathematicization of general science and special disciplines it is necessary to seek to achieve that specialists master modern methods and means of scientific analysis. Continuous economic education must be provided from the beginning to the end of courses, and students' legal and ecological education must also be ensured. They must also be provided with better opportunities to study the theory and history of Soviet and world culture.

Rectors and party, Komsomol, and trade union organizations of VUZ's are charged with the task of creating in student collectives an atmosphere of intensive creative labor in mastering knowledge and of principled mutual exactingness. It is necessary to develop and encourage in every way students' competitiveness in acquiring knowledge and to instill in them purposefulness, will, zeal, and high responsibility for the results of their work.

It is deemed necessary to improve the system of selecting future specialists throughout their training period. For this purpose it is planned:

to improve the organization of examinations and tests as an important instrument of objective and rigorous assessment of students' knowledge;

to be resolute in divesting ourselves during the early stages of a course of students who display an irresponsible attitude to their studies;

to introduce at higher educational establishments the practice of certification of students on full-time courses after their acquisition of general science and general vocational disciplines; on the basis of the results of this

certification to foreign students for specialization, selecting the best students for intensive training with longer views of study, including the transfer of students recommended by other educational establishments to leading VUZ's;

to raise the role of state examination commissions in ensuring an exacting assessment of the quality of specialists' training; and

to expand the practice of transferring students who are achieving excellent results on part-time courses to full-time courses.

Demands are raised for enhancing the standard of the organization of the teaching process as an important factor in educating students in the spirit of good discipline and organization, ensuring rational time-tables and efficient work by departments, laboratories, libraries, and all subdivisions, creating favorable conditions for the creative work of teaching personnel and students, resolutely reinforcing discipline, and making the most of every hour of study time.

With a view to enhancing the quality of the teaching process, extensively developing and deepening individual forms of tuition, and ending the situation where the number of teachers depends on the student drop-out rate, it is planned to fix the number of professors and other teaching personnel at VUZ's on full-time courses proceeding from the number of students based on enrollment plans and the set length of the course without taking the drop-out rate into consideration, and on other courses on the basis of the actual number of students. The switch to this method of determining the numerical strength of teaching staff will be effected gradually course by course, beginning in 1988. The task has been set of embarking on the gradual lowering of the ratio of the average number of students per teacher in the 12th 5-Year Plan and bringing it down in the 13th 5-Year Plan in the main to 1:8 on full-time courses, 1:15 on evening courses; and 1:35 on correspondence courses. The number of teachers at VUZ's will not be decreased despite a lower intake of students until the ratios set for the 13th 5-Year Plan are reached.

The USSR Ministry of Higher and Secondary Specialized Education and VUZ rectors and party organizations are instructed to implement measures to considerably enhance the ideological, theoretical, and methodological standards of social science teaching as the unshakable basis for molding specialists' Marxist-Leninist world outlook and ideological conviction. They must bring the content of courses in line with the decisions of the 27th CPSU Congress, the propositions and conclusions of the CPSU Central Committee Political Report, the new edition of the CPSU Program, and the CPSU Central Committee directives put forward at the 1986 Kremlin all-union conference of social science chairs. In the process of social science teaching it is necessary to reveal comprehensively and in depth the Communist Party's transforming revolutionary

activity at the present stage and its struggle for the acceleration of the country's socioeconomic development, the improvement of the economic mechanism, and the restructuring of all aspects of social life in the spirit of the CPSU Central Committee January (1987) Plenum demands.

It is proposed to create the prerequisites for systematic and thorough study by students of the works of K. Marx, F. Engels, and V.I. Lenin, and of CPSU documents. It is planned to allow more time for holding seminars and organizing students' independent work at the expense of lectures, to introduce everywhere problem-based lectures on key questions of Marxist-Leninist theory, and to ensure the active participation of students in all seminars and set examinations on all the topics of study.

The USSR Ministry of Higher and Secondary Specialized Education is instructed to prepare, together with the USSR Academy of Sciences, the CPSU Central Committee Institute of Marxism-Leninism, and the CPSU Central Committee Academy of Social Sciences, new text books based on uniform syllabuses elaborated for the history of the CPSU, philosophy, political economy, and scientific communism. A final state examination in Marxism-Leninism is being introduced at all VUZ's.

The CPSU Central Committee and USSR Council of Ministers instruct the USSR Ministry of Higher and Secondary Specialized Education, the USSR Gosplan, USSR ministries and departments, and union republic councils of ministers to ensure transition in the current 5-year plan to the new type of collaboration between higher education and production and science which will make provision, as a rule, for the targeted training of specialists on the basis of contracts concluded between ministries and departments for whom the cadres are being trained and the USSR Ministry of Higher and Secondary Specialized Education, other ministries and departments which have VUZ's under their jurisdiction, and also directly between enterprises, organizations, and higher educational establishments within the framework of state plans for the training of specialists. It is laid down that material production sector ministries and departments must reimburse the USSR Ministry of Higher and Secondary Specialized Education, USSR ministries and departments which have VUZ's and union republic councils of ministers for part of the expenditure for the training of students incurred as a result of ensuring the requisite quality of training of specialists drawing on the centralized funds and reserves of ministries and departments. Enterprises (organizations) are to compensate ministries and departments from production, science, and technology development funds. The size of the payments is to be determined on the basis of a set rate for the partial reimbursement of the cost of training one specialist and the fixed number of young specialists to be supplied annually to ministries and departments. At the suggestion of the USSR Gosplan, the USSR Ministry of Higher and Secondary Specialized Education, and the USSR Ministry of Finance, the aforementioned set rate has been fixed at R3,000 for 1988-1990.

These funds will be used to finance capital investments for the construction and reconstruction of higher education facilities and the acquisition of equipment, instruments and computers. The USSR Gosplan is instructed to set limits for capital investments and construction, installation, and contract work for the said purposes on the basis of proposals submitted by the USSR Ministry of Higher and Secondary Specialized Education, union republic councils of ministers, and USSR ministries and departments which have VUZ's under their jurisdiction, taking into consideration the funds received by them as a partial reimbursement of the cost of training specialists.

The USSR Gosplan, the USSR Ministry of Higher and Secondary Specialized Education, union republic councils of ministers, and USSR ministries and departments are instructed to improve the system for planning specialist training and determining the actual requirement for cadres.

The USSR Ministry of Higher and Secondary Specialized Education is required:

In cooperation with the USSR Academy of Sciences and the USSR State Committee for Science and Technology to elaborate, as part of a comprehensive 20-year program for the USSR's scientific and technical progress, forecasts for the training of specialists bearing in mind the development of production forces and promising spheres of science and technology;

in cooperation with USSR ministries and departments and union republic councils of ministers to elaborate and submit to the USSR Gosplan proposals for the Basic Guidelines for the Economic and Social Development of the USSR section pertaining to the training of specialists and reinforcement of the material and technical base of higher education;

in accordance with the set procedure to draw up draft 5-year and annual plans for the training of specialists on the basis of block indicators (covering groups of specialisms) taking account of the contracts concluded with ministries and departments; to approve 5-year plans for the targeted training of specialists with higher education on the basis of proposals from union republic councils of ministers and USSR ministries and departments which have VUZ's under their jurisdiction and requests from USSR ministries and departments for which the specialists are being trained.

In the current 5-year plan the USSR Gosplan is required to switch to planning the training of specialists with higher and secondary specialized education on the basis of block indicators (covering groups of specialisms) or specific specialisms, where necessary. It is recommended that the USSR Gosplan together with the USSR Ministry of Higher and Secondary Specialized Education make provision for a reduction in the intake of students in a number of engineering and technical fields with a view to eliminating the excess of engineering specialists in national economic sectors. They are to elaborate and dispatch to USSR ministries and departments and union republic councils of ministers 5-year quotas (broken down by year) for graduates from full-time VUZ courses to be dispatched to them.

On the basis of state plan targets for the training of specialists, union republic councils of ministers and USSR ministries and departments which have VUZ's under their jurisdiction will draw up and, after coordination with the USSR Ministry of Higher and Secondary Specialized Education, approve plans for the training of specialists in specific fields.

The decree emphasizes that union republic councils of ministers, USSR ministries and departments, and leaders of associations, enterprises, and organizations must determine the actual requirement for cadres and be fully responsible and able to substantiate their requests for cadres.

The USSR Ministry of Higher and Secondary Specialized Education is instructed, together with interested ministries and departments, to improve the practical training of specialists and the organization of production practice for students. It is laid down that at every stage of the students' course of study their production and practical training must be implemented in cooperation with base enterprises, institutions, and organizations on the principle of combining study with productive labor on a part-time basis and in jobs requiring great professional skill including those of technician, engineer, economist, and other specialist jobs.

It is deemed expedient for every student, and above all students at engineering-and-economics, and agricultural VUZ's to acquire the skills of a manual job within their field and also master the basic professional skills which they will require in their future jobs. It is planned to create training-science-production complexes at leading enterprises which will incorporate branches of VUZ departments, joint scientific research subdivisions, and experimental production sections. Permission is given to use training centers (experimental facilities) organized within leading associations, scientific research organizations, and design bureaus for the practical training of students and retraining of VUZ teaching personnel.

The CPSU Central Committee and the USSR Council of Ministers deem it necessary to reorganize the system of part-time courses for training specialists in full-time employment and to resolutely eradicate the serious shortcomings which exist in this sphere. It is proposed to establish order in the training of specialists by means of correspondence courses. It is proposed to specify by the 1987/88 academic year the list of specializations which are most suited for this kind of training. It is planned to review the network of VUZ's and their structural subdivisions which provide correspondence courses and to concentrate this kind of training primarily in VUZ's which run full-time courses in the same or allied fields and have the necessary skilled teaching personnel and training and laboratory facilities at their disposal. It is proposed to enroll for VUZ correspondence and evening courses above all people with the appropriate secondary education and people already working in the given field.

The attention of VUZ rectors where specialists in full-time employment are being trained is drawn to the need to create the necessary conditions to enable young people working at enterprises and organizations which operate in two or

three shifts to follow courses at their VUZ's. It is proposed to adopt a more exacting approach to the assessment of the work of students in full-time employment and to introduce their systematic supervision to ensure that they master the prescribed material and cover their study program in full. Leaders of enterprises and organizations must provide the necessary aid and assistance for full-time workers who follow courses and ensure their rational utilization both during the course of study and on its completion.

The USSR Ministry of Higher and Secondary Specialized Education and VUZ rectors are required to effect the comprehensive computerization of the teaching process; to ensure the allocation of at least 250-300 hours of hands-on experience for students on engineering, technical, and economics VUZ courses and 100 hours of hands-on experience for students on other VUZ courses; on the basis of leading VUZ's to organize the study of methodological, psychological, and other problems connected with the utilization of computer equipment in the teaching process, and also to set up retraining and skill improvement courses for professional and teaching staff in the sphere of the utilization of computer instruction technology; to ensure the centralized elaboration and duplication of applications programs for teaching disciplines and of software for automated teaching systems with a view to creating on this basis an all-union data bank for computer instruction by 1990; and to make more active use of leading foreign experience and opportunities for international cooperation, primarily with socialist countries, in the sphere of computerizing the teaching process.

The USSR Ministry of Higher and Secondary Specialized Education, ministries and departments which have VUZ's under their jurisdiction, and VUZ rectorates and party organizations are instructed to radically improve the selection for training of young people from various social groups who are best prepared for this purpose. In cooperation with the USSR Ministry of Education, the USSR State Committee for Vocational and Technical Education, the USSR State Committee for Labor and Social Problems, and the Komsomol Central Committee, they are instructed to develop and improve long-term forms of vocational guidance for young people and to select the most capable young men and women for enrollment at VUZ's; to ensure objectivity in their competitive selection, strictly observing the principles of social justice; to eliminate protectionism, bribery, and other negative phenomena during enrollment at VUZ's; to exact strict administrative and party responsibility from officials and VUZ leaders who tolerate the violation of or deviation from the established enrollment procedure; and to refrain from lowering demands on the standard of knowledge of high-school graduates in order to meet the enrollment target when there is little competition for places.

It is deemed expedient to give priority during enrollment for engineering and technical courses to people who have production experience in the given field, or a corresponding vocational technical or secondary specialized education, or creative technical abilities; for teaching courses to people who like working with children, have experience in this field, have been recommended by schools' pedagogical councils, labor collectives, or rayon (city) Komsomol committees; and for agricultural colleges above all to

young people who have demonstrated an interest in and inclination for work in agricultural production. As regards medical training it is proposed (as from 1989) to accept young people who have worked at least 2 years as junior or middle-range medical staff and have the recommendation of the corresponding medical establishments. Servicemen transferred to the reserve are also to be given priority during enrollment for VUZ courses.

It is laid down that leading workers from all sectors of the national economy and kolkhoz members with at least 2 years' work behind them as well as people in similar categories to those mentioned will be admitted to preparatory departments of VUZ's.

The USSR Ministry of Higher and Secondary Specialized Education and the USSR State Committee for Publishing Houses, Printing Plants, and the Book Trade are instructed to adopt measures to create high-quality textbooks and teaching aids for VUZ's which will meet modern demands, to ensure better provision of students with the necessary study literature, and to engage prominent scientists and national economy experts to write and review these textbooks. It is planned to introduce more widely the practice of competitions for the creation of textbooks, to step up the production of study literature, to ensure its systematic updating, and to raise the rates of payment to authors for producing VUZ textbooks and teaching aids.

The attention of the USSR Ministry of Higher and Secondary Specialized Education and of ministries and departments with VUZ's under their jurisdiction is drawn to the need to enhance the role of VUZ libraries as an important component of the system of scientific information services for students, postgraduates, teachers, and scientists. It is proposed to strengthen the material base of libraries, to expand reading rooms, and to equip reading places with technical facilities for individual use. It is planned to equip libraries with means for automating and mechanizing library processes and video and copying equipment. As from 1988, 5,000 additional copies of all titles of books are to be published in the "Library Series" for VUZ libraries.

The USSR Ministry of Higher and Secondary Specialized Education, the USSR State Committee for Cinematography, and the USSR State Committee for Television and Radio Broadcasting are instructed to carry out measures in the 12th 5-Year Plan to widely develop educational films and television; to organize the production and hire of educational video tapes for VUZ's; to strengthen the material and technical base of the USSR Ministry of Higher and Secondary Specialized Education Soyuzvuzfilm central laboratory; and to organize educational television broadcasts for students within the system of skill improvement and cadre retraining courses, primarily in the general science disciplines.

The CPSU Central Committee and USSR Council of Ministers deem it necessary to accelerate the development of the material and technical base of higher educational establishments channeling funds from sector ministries and departments for which specialists are trained into this area in addition to the state appropriations for this purpose.

The USSR Ministry of Higher and Secondary Specialized Education, the USSR Gosnab, USSR ministries and departments, and union republic councils of ministers are required to ensure the construction of teaching and laboratory premises for VUZ's with an overall floorspace of 18 million square meters in the 12th-14th 5-Year Plans, including 2 million square meters in 1987-1990.

It is required to draw up and implement a comprehensive program for strengthening the VUZ teaching and laboratory base and constructing hostels and sociocultural facilities for the period through the year 2000, utilizing ministry and department funds for this purpose with their permission; and to lay the groundwork during the 12th 5-Year Plan for the construction of higher education facilities in the 13th and 14th 5-Year Plans.

In view of the need to bring the material and technical base of VUZ's in line with normative requirements and taking into account that the volume of construction in the 13th and 14th 5-Year Plans will have to be considerably increased, the USSR Ministry of Higher and Secondary Specialized Education, USSR ministries and departments, and union republic councils of ministers are authorized to elaborate during the 12th 5-Year Plan design and estimate documentation for the construction and modernization of VUZ's in the 13th 5-Year Plan. The USSR Gosplan and union republic councils of ministers are instructed to raise the limit set for the 12th 5-Year Plan on expenditure for design and survey work on higher educational establishment projects funded from capital investments.

The decree instructs the USSR Ministry of Higher and Secondary Specialized Education, the AUCCTU, USSR ministries and departments with VUZ's under their jurisdiction, union republic councils of ministers, and soviet ispolkoms to adopt measures to improve the housing conditions and consumer, medical, and sanatorium and health resort services for workers in higher education.

USSR ministries and departments are authorized to allocate capital investments to VUZ's for the construction of housing for professorial and teaching staff and scientific workers. The USSR Ministry of Higher and Secondary Specialized Education and union republic councils of ministers are set targets for the construction in 1987-1990 and the period through the year 2000 of housing, polyclinic, and sanatorium and health resort facilities for professorial and teaching staff.

USSR ministries and departments and union republic councils of ministers are required to supply the VUZ's under their jurisdiction with computer equipment as a matter of priority.

The resolution makes provision for the further development of the material and technical base of VUZ publishing and printing enterprises. As a number of VUZ's publishing houses are to be created. Newly organized VUZ publishing houses and certain existing ones are elevated to the category of central or republic publishing houses.

It is planned to increase the capacities of the Soyuzvuzpribor all-union specialized scientific-and-production association enterprises for the production of standardized teaching equipment, training aids, and other technical teaching facilities.

With a view to consolidating VUZ graduates' practical professional skills and know-how in their specific field, enhancing their responsibility for the results of their work, and making better use of specialists in the national economy, the CPSU Central Committee and USSR Council of Ministers deem it necessary to introduce a special assessment of young specialists 3 years after they have been assigned to their posts and, on the basis of the results of this assessment, to issue them with a qualification certificate. The results of this certification, which will be carried out at enterprises and organizations with the participation of higher educational establishments, are regarded as an important quality criterion of specialists' higher education training.

The USSR Ministry of Higher and Secondary Specialized Education, USSR ministries and departments, union republic councils of ministers, krayispolkoms, oblispolkoms, and heads of enterprises, organizations, institutions, and higher educational establishments are instructed to adopt measures to improve the placement of graduates, to enhance their responsibility for reporting on time on their assignments, and to create the necessary housing, living, and production conditions for them.

In this regard it is laid down that:

the list of established posts earmarked for VUZ graduates in the current year by the commission for personnel allocation shall not be open to other workers. In the event of production necessity workers may be accepted for these posts until such a time as young specialists are appointed to them;

persons who graduate with distinction from VUZ's are to be paid at a higher rate within the salary scale laid down for the post, and this is to be retained until the first change of salary in keeping with the decision of certification commission;

persons who graduate from VUZ's and are assigned to work in another locality at enterprises, establishments, and organizations which do not have their own housing stock and do not organize their own house building or participate in house building are to be provided with accommodations by local ispolkoms on application by the relevant enterprises, establishments, or organizations according to the procedure laid down in Item 3 of USSR Council of Ministers Resolution No 677 dated 15 July 1981;

enterprises, establishments, and organizations (excluding sovkhoses and other state agricultural enterprises) and local soviet ispolkoms are to be permitted, when their own housing stock is inadequate or there are temporary difficulties in the priority allocation of accommodation, to lease accommodation from

citizens for allocation to VUZ graduates who have come on assigned work, and to make a payment not exceeding R10 per month per worker in addition to the maximum stipulated housing allowance;

enterprises and organizations are to be able, if the need arises, to grant loans to young specialists from their own funds to enable them to join house-building cooperatives;

in the event of nonappearance at work or refusal to start work at the place assigned without valid reasons or in the event of dismissal before the expiry of the stipulated period of work for breach of labor discipline or resignation without valid reasons, graduates of educational institutions are to compensate the enterprises or organizations for expenses incurred in paying them grants during their studies out of the resources of the enterprises or organizations;

USSR ministries and departments and union republic councils of ministers, working in coordination with the USSR State Committee for Labor and Social Questions, are advised to draft and confirm in 1988 on the basis of job certification sector lists of posts open to specialists with higher or secondary specialized education in the light of the demands of the overall sector skill requirements of the posts in question and the rational correlation of specialists with higher or secondary specialized education to the new list of VUZ specializations.

The CPSU Central Committee and the USSR Council of Ministers resolution sets the task of improving the management of higher education and focusing the attention of the USSR Ministry of Higher and Secondary Specialized Education on pursuing an integrated state policy in the higher education sphere, planning its development, stepping up the ministry's monitoring function, and intensifying state inspection to ensure high-quality teaching; to raise the level of organizational and scientific methodological leadership of VUZ's, irrespective of which department they come under, and to make union republic ministries of higher and secondary specialized education and sector ministries and departments more accountable for the results of VUZ activity; to introduce as of 1987 regular certification of VUZ's (faculties and departments) as part of the state inspection process, during which the standard of educational, training, scientific, and technical work, the quality of the teaching staff, and the state of the material base will undergo comprehensive evaluation; and to carry out measures to ensure more effective VUZ specialization and eliminate wastage in training very small numbers of students in numerous VUZ's in the light of the potential of interdepartmental and interrepublic cooperation in training specialists. To this end it is planned to take appropriate measures in 1987-1988 to establish order in the existing network of educational institutions and to abolish a number of VUZ's, branches, faculties, departments, laboratories, and educational consultation centers lacking skilled academic teaching cadres and the requisite educational and laboratory base.

It is planned to enhance the influence of the USSR Ministry of Higher and Secondary Specialized Education on the selection of VUZ rectors, irrespective of which department they come under. A ministry directive that a rector be released from his duties because of gross violations or shortcomings in work is binding on ministries and departments. It is deemed expedient to make VUZ rectors subject to election.

With the aim of improving the elaboration of curricula, programs, and other educational methodology materials and generalizing and disseminating advanced experience in the sphere of educational and training work the USSR Ministry of Higher and Secondary Specialized Education, together with the relevant ministries and departments, is permitted to set up educational methodology associations grouped according to related specializations and based on VUZ's.

To improve the coordination of VUZ activity in cities and economic regions the USSR Ministry of Higher and Secondary Specialized Education is authorized to set up regional higher education centers.

With the aim of ensuring that new tasks arising in educational institutions' activity are resolved flexibly and to a high standard rectors are permitted to regulate the staffing level and structure within the limit of the allocated wages fund and the overall numbers and salaries of the posts laid down for VUZ workers and to set up and use material incentive funds in conjunction with trade union organizations. It is ordered that petty regulation of educational institutions' activity be eliminated, formalism and bureaucracy be removed, and the favorable conditions necessary for VUZ departments to work productively be created. VUZ's are permitted to redesignate the councils of VUZ's, branches, and faculties scientific councils.

The decree enjoins union republic communist party central committees and party kraykoms, obkoms, gorkoms, and raykoms to adopt measures to step up party leadership of VUZ's and extend effective assistance to VUZ party organizations and collectives in restructuring their activity in line with the guidelines of the 27th party congress and the demands of the CPSU Central Committee January (1987) Plenum.

The decree stressing the topicality of the VUZ party committees' task--the task of ensuring that Communists play a vanguard role in radically renewing the whole work of training and educating students and achieving a new quality in the training of future specialists. It is necessary to activate the work of faculty party organizations and department and laboratory party groups in this area; to step up the accountability of leaders of VUZ's, faculties, and departments for ensuring absolute implementation of the basic guidelines for restructuring higher and secondary specialized education in the country; to increase party influence on the activity of VUZ and faculty scientific councils and enhance their role in improving the educational process, increasing the scientific and theoretical standard of teaching, and determining effective psychological-pedagogical methods of education; and to resolutely eliminate formal and bureaucratic strata in the organization of departments' educational work.

The task is to show unremitting attention to work with academic teaching cadres and their ideological, political, and professional development. Special attention is to be paid to improving the work of social sciences departments, mobilizing their party groups to ensure steady improvement in young people's Marxist-Leninist education, the activation of seminar classes, and the overcoming of scholastic theorizing and dogmatism in teaching vital revolutionary theory. The need to attract wide audiences of students and teachers to speeches made by leading party, soviet, and economic workers is noted. It is proposed to increase the effectiveness of the patriotic and international education of young students, to uncompromisingly repulse all manifestations of nationalism and chauvinism in VUZ collectives, and to counter them by consistent and sustained internationalism.

The All-union Komsomol Central Committee, union republic Komsomol central committees, and Komsomol kraykoms and obkoms must, the decree points out channel the activity of VUZ Komsomol organizations toward the main tasks of training, thorough mastery of a specialization, the ideological, moral, and civic formation of future specialists, and the inculcation in them of a sense of involvement in the present-day transformation of society and a desire to work wherever the interests of the motherland demand; wage aggressive struggle against bourgeois ideology, spiritual aridity, and low-grade Western culture; establish a healthy cultured, and sober way of life in the student milieu and imbue students with a spirit of collectivism, comradeship, modesty, and responsiveness; teach future specialists to make independent decisions and answer for their actions and provide them with expertise in organizational and educational work; and actively develop student self-management, initiative, and the independence of student collectives. VUZ rectorates and party committees must take fuller account of students' opinions and their proposals for improving the organization of the training and education process when tackling all basic teaching and training problems; eliminate serious shortcomings in student detachments' activity by gearing summer work to the very important task of educating young people for labor; and link students' work in detachments more closely to the field of specialist training.

The CPSU Central Committee and USSR Council of Ministers resolution expresses confidence that party, soviet, and economic bodies and collectives of VUZ's, enterprises, and organizations will do everything necessary to radically improve the quality of training and the utilization of specialists in the national economy.

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RAIL SYSTEMS

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NEW REGULATIONS FOR HAULING OUTSIZED LOADS EXPLAINED

Moscow ZHELEZNODOROZHNIY TRANSPORT in Russian No 11, Nov 86 pp 61-67

[Article by engineers V.N. Androsyuk and L.M. Moshek and Candidate of Technical Sciences Yu.M. Lazarenko under the rubric "Our Consulting": "The Shipping of Oversized and Overweight Freight"]

[Text] Beginning 1 Mar 87, the Regulations on Shipping Oversized and Overweight Freight on 1,520-mm-gauge USSR Railroads (TsD/4172) are in effect. They take into account many years of experience in the application of the former Regulation TsD/2530, as well as the growing requirements for efficiency in shipping, trends toward increase in the weight and dimensions of large equipment and the specific features of the utilization of new transport equipment to ensure shipping safety. The opportunity of utilizing clearance reserves freed as a result of the re-installation of poor-sized structures also has great significance.

The regulations were developed on the basis of research conducted at the All-Union Scientific Research Institute of Rail Transport (VNIIZhT). They establish the procedure and conditions for shipping oversized loads on 1,520-mm gauge railroads in the USSR, as well as all freight on heavy-load cars. The transport of this freight is permitted only with the permission of the Shipping Administration of the MPS [Ministry of Railways] Main Traffic Administration.

The regulations also establish the procedure for organizing the shipping of oversized, heavyweight and extra-long freight on international connections. This shipping is implemented in accordance with the Agreement on International Rail Freight Connections (AIFS) and other agreements on direct international rail freight connections.

The new regulations contain many new provisions. First and foremost is a new system for classifying and, for the first time, codifying oversized freight. The rights of railroads to coordinate one-time shipping and to allow the dispatch of oversized and overweight freight have been expanded. New standards of allowable longitudinal and transverse displacement of the center of gravity of freight relative to the axles of the rolling stock have been included in the requirements for the dispositions and fastening of this freight on rolling stock. A new technique is used to determine the

capabilities and conditions for the passage of oversized freight through structure and on two-tracked lines, as well as the reserves of transverse stability of loaded multi-axle heavy-load cars against turning over.

Consultation about the new regulations is published below at the request of a multitude of readers.

The new regulations differ substantially from the preceding ones in structure and content. They have two parts: the basic part (8 chapters) and the methodological and calculation part (18 appendices). The basic section presents a classification of oversized and overweight freight, including export and import freight, requirements for the organization of freight traffic by siding and station and in the execution of shunting operations, provisions for the use of heavy-load cars and the forwarding of oversized cars and general requirements for the disposition and fastening of freight. The requirements are clearly divided by stages and by the level of shipping support (MPS, railroad administration, railroad division, line subdivisions).

The supplements to the regulations give methodological computational and standards materials for determining the extent that the freight is oversized, an engineering study of the conditions for their passage, the determination of the transverse stability of the loaded heavy-load cars etc.

We will review the principal sections of the regulations in detail, taking into account the changes made and the basic preconditions for them.

The Classification of Oversized and Overweight Freight

The new regulations elaborate a definition of oversized and extremely oversized freight, introduce a new lower zone of non-conformity to clearance and change the size and designations of various values of it.

Included in oversized freight is freight that in placement on open general-purpose rolling stock with a bed height of 1,300 mm extends beyond the loading clearance on straight and curved sections of track. The freight is also considered oversized if it is within the limits of loading clearance on straight sections, but on curved ones goes beyond them to a value greater than the geometric deflection of the standard railcar (24 m [meters] long and 17 m high).

Overweight freight (within the country) is freight that has a weight and length or a load on the frame (bed) of the railcar that exceeds those allowable for general-purpose 4-axle rolling stock. This freight is shipped in heavy-load cars.

Depending on the height to which the freight exceeds the dimensions of the loader, three (in place of the former two) zones of non-conformity have been established: lower, lateral and upper (Fig. 1).

The lower zone of non-conformity is introduced first. It is located at a height of 380 to 1,400 mm and from 1,230 to 1,400 mm from the level of the railhead at a distance from the track centerline of 1,626-1,760 mm and 1,761-

2,240 mm respectively. This zone establishes the possibility of going beyond the outline of the loading clearance of that part of the freight that goes below the level of the bed of a conventional flatcar. The possibility and conditions for shipping such freight earlier had to be verified in each individual case in order to resolve this question. This seriously limited the acceptance of freight for shipment with regard to the increased operational costs for studying the conditions.

The height of the lower boundary of the zone of 380 mm is coordinated with the allowable height of a loaded flatcar of 270 mm, and 1,230 mm with 1,100 mm. Portions of the freight can be located on the indicated flatcars. With regard to the fact that on a number of railroads, work has still not been completed on eliminating the non-conformity of low flatcars of a height greater than 270 mm, however, the smallest zone for lower non-conformity within the limits of the 1st and 2nd stages has been temporarily set at 480 mm.

The lower boundary of the lateral zone of non-conformity has been established at a level of up to 1,400 mm, and not 1,230 as before. Practice has shown that the lateral oversized portions of the freight do not extend to 1,230 mm in all cases. At the same time, taking into account that there exist high flatcars on the network with a height of over 1,100 mm (and in certain cases up to 1,300 mm), all freight with lateral non-conformity had to be verified for the possibility of passage along sections where there were such flatcars. Raising the lower boundary of lateral non-conformity to 1,400 mm removes the need for such verifications. It will only be necessary in cases where the freight really does enter the lower zone of non-conformity.

Taking into account the established outlines of the degrees of lower non-conformity, this verification can be carried out in advance, while the conditions for passage are reflected in the directives of the chiefs of the railroads and railroad divisions.

Six degrees have been established within the limits of the lower zone of non-conformity (see Fig. 1). The boundaries for width between them that have been adopted (with the exception of the 2nd) are the same as for the degree of lateral non-conformity. The second degree of lower non-conformity has been established within the limits of 1,700-1,760 mm. This is associated with the fact that the network still has high passenger platforms with a distance from the track centerline of less than 1,920 mm (up to 1,850 mm). The introduction of degrees into the lower zone simplifies the resolution of the task of determining the conditions for the passage of freight with both lower and lateral non-conformity.

The following considerations were taken into account in changing the degrees of lateral non-conformity. The principal purpose of the former degrees of lateral non-conformity was a determination of the conditions for passage of freight and oncoming trains on double-tracked lines. Only the largest of the lateral degrees (the former 4th) had to be taken into account in checking the possibility of the passage of the freight through structures. The passage of freight of any other lateral degree was not, as a rule, limited by the clearances of existing structures.

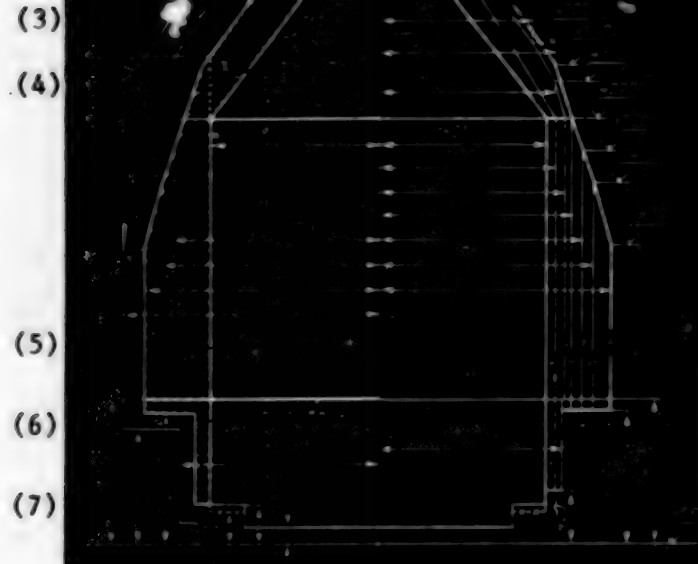


Fig. 1. Zones of non-conformity to clearance (A) and degrees of non-conformity in the zones (B)

Key: 1--Clearance C; 2--Clearance 1-C; 3--zone of upper non-conformity; 4--zone of joint upper-lateral non-conformity; 5--zone of lateral non-conformity; 6--zone of lower non-conformity; 7--railhead.

In the new regulations, the specific functional features of the lateral degrees are retained. The purpose of the changes is to eliminate the existing individual disparities in the conditions of the optimal use of the clearance interval of oncoming consists on adjacent tracks. The halfwidths of the first two degrees of lateral non-conformity (1,700 and 1,800 mm) correspond to the largest transverse dimensions of the rolling stock with dimensions T_{pr} and T respectively and it was not expedient to change them. For the remaining degrees of lateral non-conformity, it was necessary to elaborate how efficiently the non-conforming space is being used by oncoming rolling stock on double-track lines in light of their width. It was established that this was resolved insufficiently precisely in two cases within the framework of the previous regulations. The first relates to the size of the largest lateral degree, in accordance with which trains with this freight could encounter each other on a double-track line with a normal track spacing width of 4,100 mm.

According to Regulation TsD/2530, this could be the 1st lateral degree (halfwidth of 1,800 mm), since the passage of 2nd-degree freight (halfwidth of 1,900 mm) is not permitted on the tracks of double-track lines in an oncoming direction. Calculations showed, however, that a certain portion of 2nd-degree freight that did not completely fill it up by width could run in an oncoming direction. The halfwidths of the freight therein should not exceed 1,850 mm. Taking into account that on certain railroads the share of such freight of the total number of lateral 2nd-degree non-conformity can comprise a considerable amount, a new lateral degree of dimensional excess with a halfwidth of 1,850 mm was introduced in place of 1,900 mm in order to reduce operational difficulties in the passage of oversized freight on double-track lines.

The second is associated with the fact that the size of the lateral degree of non-conformity to clearance for which freight was permitted to pass on double-track lines without closing the oncoming direction was reduced. According to Regulation TsD/2530, on double-track lines with a normal track spacing width of 4,100 mm, passage was permitted without closing oncoming traffic for oversized freight that did not exceed the 3rd degree of lateral non-conformity (a halfwidth of 2,000 mm). At the same time, the calculations carried out according to the Instructions for the Application of Clearance for Proximity to Structures of GOST [All-Union State Standard] 9238-73 show that a certain portion of freight in the 4th degree of lateral non-conformity can pass in oncoming traffic if its halfwidth does not exceed 2,080 mm. According to the results of statistical analysis, the share of such freight can reach 30 percent of the total number of 4th-degree lateral non-conforming freight. For the purpose of reducing expenses from delays of oncoming train traffic in the passage of 4th-degree non-conforming freight, a new lateral degree was introduced with a halfwidth of 2,080 mm, in accordance with which freight can pass on double-track lines with a distance between the track centerlines of 4,100 mm without closing off oncoming traffic.

Practice has shown that the configuration of the earlier zero, 1st and 2nd degrees of lateral non-conformity were needlessly complex in their upper portions. By way of example, the rectangular portion of the zero degree ends at a height of 3,900 mm, the 1st degree at 3,750 mm and the second degree at 3,600 mm. These degrees then narrow right up to the upper boundary (4,000 mm). It was established that there was no need for this narrowing, insofar as in surmounting the rectangular portions of the indicated degrees up to 4,000 mm the conditions for passage of oncoming freight on double-track lines with a track spacing width of 4,100 mm are no worse. Furthermore, in a number of cases they were improved, as for example for freight with a rectangular cross-section 3,400 mm wide and 3,920 mm high. According to the old classification, this freight would be 1st degree (a halfwidth of 1,800 mm), while according to the new it is also 1st degree but with a halfwidth of 1,700 mm. Thus, a rectangular shape is given to the outline of each of the three degrees of lateral non-conformity within the limits of the entire height of the zone of lateral non-conformity.

Along with this, the individual size of the 3rd and 4th degrees of non-conformity were elaborated. They take into account more precisely the actual clearances of structures. As a result, aside from the earlier existing five degrees, six degrees of lateral non-conformity have been introduced, the

maximum halfwidths of which are equal to 1,700, 1,800, 1,850, 2,000, 2,080 and 2,240 mm (instead of 1,700, 1,800, 1,900, 2,000 and 2,225 mm).

The size of the upper degrees of non-conformity have been altered. The former zero upper value has lost its practical significance. It differs little from the network-wide loading clearance (5 mm at a height of 4,000 mm and 80 mm at a height of 5,300 mm) and to a considerable extent was already surpassed by the preferential loading clearance (at a height of 4,000 mm the preferential clearance is 20 mm wider than the zero value). It was not expedient to retain this degree. The second degree of upper non-conformity was retained without alteration with the exception of the lower limit, which was essential for overlap with the corresponding degree of lateral non-conformity, and it has been given the name of first degree.

Practice in employing the 3rd upper degree of non-conformity has shown that its size does not correspond to the actual changed dimensions of the structures and is not coordinated with the configuration of the upper outlines of the existing dimensions of rolling stock 1-T GOST 9238-83 and the T_{pr} being incorporated. Furthermore, the new zonal loading clearance has not been taken into account.

The elimination of these disparities led to a certain change in configuration and an increase in the size of the former 3rd upper degree. This will allow part of the freight currently passing as oversized to be shipped according to the oversize rules, which will accelerate its transport and reduce operating expenses.

A serious shortcoming of the former classification of non-conformity in the upper zone was the fact that the requirements of precision and simplicity in determining the conditions for freight passage with such non-conformity on double-track lines were not taken into account. These conditions were given in the former regulations for the outline of the degree overall, as well as depending on the height of the non-conformity within the framework of the corresponding degrees. Various conditions for the passage of oncoming rolling stock were established therein for varying heights of one and the same degree. This is very complex for work in practice. A new method of taking upper non-conformity into account in determining conditions for the passage of freight in oncoming traffic along adjacent track was determined in this regard.

In accordance with the indicated method, upper non-conformity affects the conditions for the passage of freight on double-track lines if its halfwidth in the given zone is more than 1,625 mm, i.e. part of the freight falls in the dashed area in Fig. 1. Two cases are possible therein. The first is that the width of the freight in the upper zone is less than the lateral zone, and the second is the converse. It is only necessary to take freight width in the upper zone into account for the second case.

If we theoretically extend the lateral degrees into the upper zone and find those of them that correspond to the freight here, then the lateral degree will also describe the conditions for the passage of freight taking into account upper non-conformity. This principle has been placed at the

foundation of the new method. The dashed area into which the lateral degrees have been theoretically extended are called the zone of joint lateral and upper non-conformity.

The Designation and Coding of Freight Non-Conformity

The new directive changes the designations for degrees of non-conformity. This was brought about by the fact that the former system of designations, including the use of the symbol "0" (the zero degree), Roman numerals (for lateral degrees) and literal definitions (lateral and upper) do not correspond to the requirements of machine informational accounting and its subsequent processing and analysis. For example, the symbol "0" can be used in coding for the rejection of some trait, Roman numerals are not used and literal definitions are redundant.

Taking this into account, a transition was made to designations of the degrees of non-conformity in any zone using Arabic numerals beginning with 1. In the three zones--lower, lateral and upper--non-conformity can be designated by a number with three digits: the first is the number of the degree of lower non-conformity, the second the lateral and the third the upper. This number is called the non-conformity index. The placement (rank) of the digits in it signifies the zone of non-conformity, and the digit is itself the number of the degree. By way of example, the index 241 signifies that the freight has a 2nd degree of lower non-conformity in the lower zone, a 4th degree of lateral non-conformity and a 1st degree of upper non-conformity. If in any zone the freight does not go beyond loading clearance, then a zero must be indicated for this zone. For example, 032 means that the freight has no non-conformity in the lower zone, 103 means the same is true for the lateral zone and 140 for the upper zone.

Extreme non-conformity in any zone is designated by the digit 8. Thus, if the freight is extremely oversized in the first three zones, its index will be 888. In shipping practice there occur cases where the freight goes beyond the loading clearance of 5,300 mm. It is accepted to consider that this freight has extreme vertical non-conformity. When this exists, the freight non-conformity index becomes four-digit, and another 8 is added, i.e. 8888.

When there is no extreme non-conformity in a zone, then the number of the appropriate degree of non-conformity must be indicated, such as 2838 (the freight is 2nd-degree in the lower zone and 3rd-degree in the upper). With the presence of several non-conforming loads on a train, the train index of non-conformity indicates the greatest of the existing degrees of non-conformity in each zone.

Theoretical Non-Conformity

The size of the degrees of non-conformity by width are determined according to the same principle as the clearance for structures. They are established for straight sections of track, and on curves they are increased by the geometric deflection b_R of a standard railcar (the freight can extend beyond the degree to the value of the deflection).

As distinguished from the clearance for structures, where for every curve a geometric deflection is established, a widening of the degree is carried out for one and the same value, equal to the deflection (105 mm) of the theoretical railcar on a curve with a radius of 350 m as a standard, in the determination of theoretical non-conformity. Taking this into account, the correspondence of a load to a given degree must be verified for the conditions for its placement on straight and curved sections of track.

In comparing the load cross-section with the outlines of the degrees of non-conformity and establishing the degree of non-conformity, it should be taken into account that the degree chosen therein can only be characteristic of it as a complete description of non-conformity in the zone under consideration in the event that the geometric deflection of the load on the standard curve does not exceed 105 mm. In the opposite case, according to the conditions for the passage of freight in curves, the necessity arises of determining the theoretical non-conformity. For this, it is necessary to determine the difference Δb_R of the geometric deflections of the given load and the theoretical railcar and to determine again what degree the load is in. The establishment of the degree of non-conformity in this manner with a regard for the theoretical is indicated in the index of non-conformity of the load.

The value of the difference Δb_R depends on the wheelbase of the rolling stock l and the length of the load L . The distance from the guide section of the railcar to the cross sections of the freight under consideration where it has the largest size also has an effect. The geometrical deflections of the freight cross sections within the limits of the wheelbase (internal) can differ from the deflections of the freight cross sections beyond its limits (exterior). Therefore, the difference Δb_R must be determined for both the internal (Δb_{Ri}) and the exterior (Δb_{Re}) cross sections (see Fig. 2).

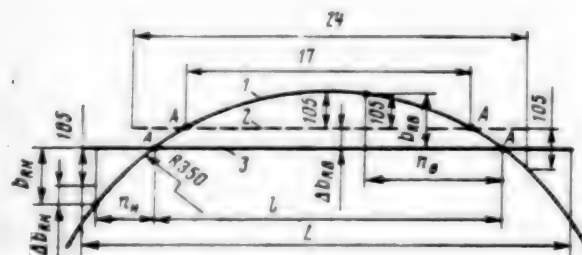


Fig. 2. Diagram for determining the theoretical non-conformity of freight loaded on a single railcar:

A--guide section; 1--track centerline; 2--longitudinal axis of theoretical railcar; 3--longitudinal axis of freight.

In the new regulations, as compared to the former ones, the standard method of determining b_R is supplemented by a tabular one, where depending on the wheelbase of the railcar and the distances from the guide section of the railcar to the cross sections n_1 and n_e under consideration, computed values for b_{Ri} and b_{Re} are already given. This eases and accelerates the process of

determining the theoretical non-conformity. For cases not envisaged by the table, the difference in the deflections is determined by calculation.

The new regulations give four variations of formulas for calculations: for shipping on a single railcar, the coupling of flatcars or coupled heavy-load cars, a multi-axle heavy-load car with a fixed wheelbase and a heavy-load car of an articulated type with a variable wheelbase. For freight shipped on a single railcar with a number of axles no greater than six (including heavy-load cars), the value of b_R is calculated depending on the wheelbase l and the distances n_1 and n_2 in accordance with the diagram presented in Fig. 2. For couplings or heavy-load cars of a coupled type, it is necessary to take into account the wheelbase of the coupling l_c instead of l and, furthermore, the wheelbase l_0 of the load-bearing flatcar (see Fig. 3). The computational diagram for the determination of the deflections of multi-axle heavy-load cars with a fixed wheelbase does not differ in principle from that presented in Fig. 3. The difference consists of the fact that instead of the wheelbase of the coupling, the wheelbase of the heavy-load car is used, and instead of the deflection of the load-bearing flatcar f_0 , the deflection of the truck group f_p is used. In order to ease the calculation of f_p , the regulations give a table of values for this quantity depending on the size of the wheelbase of the truck groups f^2 , determined as the sum of the squares of the wheelbases of the running trucks (p^2) and the distances between the support points of the joining beams (p^2).

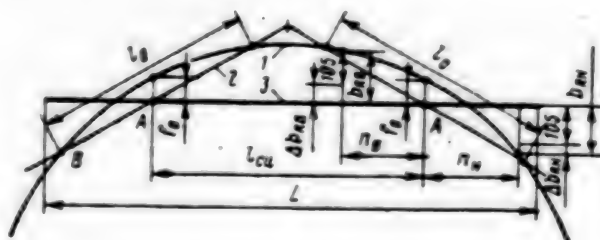


Fig. 3. Diagram for determining the theoretical non-conformity of freight loaded on coupled flatcars:

A--vertical axis of the bolster support; 2--longitudinal axis of load-bearing flatcar; 3--longitudinal axis of the freight; B--pivot-guided truck of load-bearing flatcar.

Questions of determining the difference of the deflections for heavy-load cars of an articulated type with a variable wheelbase are new. We will therefore consider them in more detail. A specific feature of modern designs of articulated heavy-load cars is the presence of two or more sets of guide apparatus (carriers) making possible the variability of their wheelbases. Furthermore, in order to circumvent obstacles located on one side of the track, the heavy-load cars are equipped with devices for shifting the load in transverse and vertical directions.

The load is fastened with bearing cantilevers 2 (Fig. 4, a). The load on them is transferred to the chassis through the roller supports B and the system of beams. In motion in curves, turning is accomplished relative to the internal guide A until the moment when the possibility of allowable transverse movement of the roller supports in cross section B. The maximum allowable transverse movement of the roller supports g_R^{ax} relative to the upper joining beams depends on the weight of the freight being shipped and can reach 550 mm.

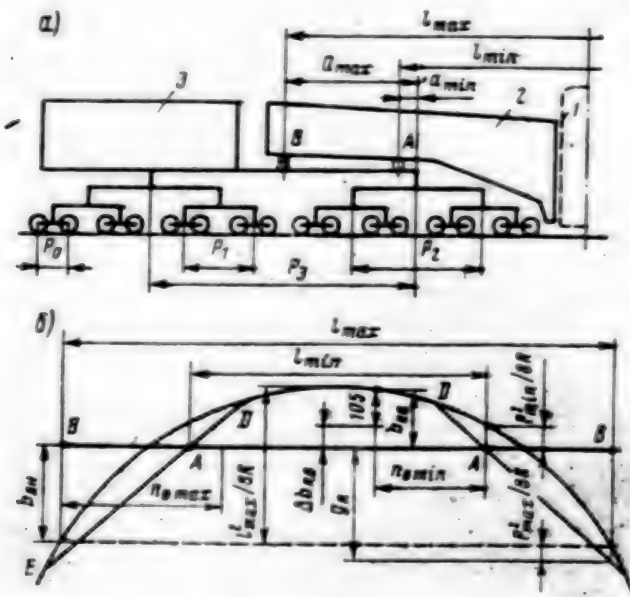


Fig. 4. Diagram of an articulated-type heavy-load car with a variable wheelbase (a) and diagram for determining the theoretical non-conformity of the freight loaded on it (b):

1--freight; 2--bearing cantilever; 3--compartment; A and B--internal and exterior guide sections respectively.

Within the limits of the allowable movement of the roller supports, the bearing cantilever along with the freight can be shifted in a transverse direction on curves only in an external direction within the limits of still unrealized transverse movement. If the bearing cantilever is shifted on the roller supports to the full value of the allowable transverse movement, a change in the guides occurs: the internal ones are disconnected and the outer ones become the guides. The heavy-load car wheelbase also changes. Instead of l_{min} --for the internal guides--it increases to l_{max} --for the external ones.

At a wheelbase of up to 40 m, the geometric deflection of the freight on the heavy-load car in curves with a radius of 300 m and more is determined with sufficient precision according to the formulas presented in the regulations on page 69 (22,23). For curves with smaller radii, calculation of the value of geometric deflection must be carried out according to more precise formula. This is not required, however, to determine the estimated non-conformity.

Coordination, Loading, Receiving and Dispatch of Oversized and Overweight Loads

Every newly created oversized or overweight article should pass through three stages of coordination for shipping by rail transport. The first stage is preliminary coordination with the Shipping Administration of the Main Traffic Administration of MPS at the stage of draft planning of the item. The purpose of this is to establish the technical possibility and method of shipping. The planning organizations or shipping enterprise makes a request for the coordination of shipping, which contains the grounds for the necessity of the shipment of the item (freight) with oversized dimensions or as overweight (the impossibility of division into individual units of smaller sizes and weights) and other technical and economic grounds, a sketch of the item in three projections and its size and weight parameters. Proceeding from this, the necessary type of rolling stock for shipment is determined, the possibility of passage in accordance with track descriptions, artificial structures and apparatus on the shipment route is verified and the allowable non-conformity of the item and the shipping terms are established.

In the second stage, the shipper coordinates the loading documentation with the railroad administration. Four copies of the diagrams for the disposition and fastening of the freight in three projections are presented here along with calculations of non-conformity, transverse stability and freight fastening and a copy of the preliminary coordination document.

The new regulations make specific the requirements for the formulation of loading drawings. The transverse cross-sections should be executed on the scale of 1:20 or 1:25 with an indication of the horizontal distances from the track centerline and the vertical ones from the level of the railhead for the points of the freight that are most representative of the non-conformity (the critical points). The drawings should indicate the main view and view from above, as well as cross-sections, in which critical points exist, the distances from these points along the longitudinal axis to the guide section of the railcar. The indication of the center of gravity in all three projections in the drawings is envisaged.

If the freight being shipped on an articulated-type heavy-load car is slung down in lugs or in a number of other cases, calculations for disposition and fastening of the freight are not presented. The strength of the freight fastening in these cases is considered at MPS. The railroad and the shipper are informed of the results.

The loading documentation is considered in the railroad administrations in the traffic, container-shipping and commercial operations, and track and rolling-stock services. If the freight has vertical non-conformity, specialists from the electrification and power-facilities services are also included. The passage of freight with 1st-3rd degrees of lateral and 1st degree of upper non-conformity that is loaded on flatcars, 4- and 6-axle heavy-load cars and gondola cars is, as a rule, not limited by the clearances of structures and apparatus. In these cases, therefore, the participation of specialists from the track service is not required in coordination.

The shipment is conclusively coordinated at the third stage--the Shipping Administration of MPS. This concerns all freight shipped in heavy-load cars, as well as that having non-conformity of the 3rd-6th degree of lower, 4th-6th degree of lateral and 3rd degree of upper, as well as extreme, non-conformity. The documentation for the shipment of such freight, coordinated with the railroad, is sent to the Shipping Administration and, after the receipt of a final-coordination telegram, to the loading station chief and the shipper. The freight drawings for the lesser degrees of non-conformity (1st-2nd degrees of lower, 1st-3rd degrees of lateral and 1st-2nd degrees of upper) are coordinated by the railroad. A simplified procedure for coordinating by telegram inquiry has been established for the one-time and repeated shipment of oversized and overweight freight.

Changes have been introduced in the procedure for the issue of requests for allowance and loading of oversized and overweight loads by shippers. The time frame for the issue of requests (20 days before the beginning of the month of shipment) has been abolished only for freight being shipped by heavy-load car. In order to reduce the idle time of rolling stock, and especially heavy-load cars, the station chiefs have been granted the right to permit the loading of oversized freights of the 1st-3rd degree lateral and 1st degree upper, as well as non-oversized loads on heavy-load cars with a weight of 100 tons or less per individual place. The shipper should therein offer confirmation of the recipient's readiness to receive and unload this freight.

The composition of the commission for verifying the disposition and fastening of the freight on the heavy-load cars (except articulated ones) loaded at 3rd-class and lower stations is determined by order of the chief of the railroad division. If the heavy-load car is permanently maintained by a crew of railcar-examination specialists, then the heavy-load car chief is designated as the chairman of the commission. For heavy-load cars not maintained by crews, the commission is designated by order of the chief of the railroad division from among the employees of the traffic services, rolling stock facilities and other subdivisions. The composition of the commission for the verification of non-oversized freight loaded on heavy-load cars does not include the representatives of the ways and structures district.

To avoid error in determining the non-conformity envisaged by the loading drawing, an additional compulsory requirement concerning the measurement and calculation of the actual height of the loading space of the rolling stock has been introduced in commission verification. According to the results of the verification, the commission formulates a document, the form and content of which have been substantially altered. It includes all data on the freight and rolling stock that are essential for establishing the conditions for passage without reference to the drawings, which is especially important for delays in passage. The volume of telegraph reports for the transmission of the contents of the document has been reduced: only the numerical data are transferred, with an indication of the numbers of the points in the document to which they relate, without a repetition of the name of the points.

A new procedure has been established for the commission verification of the disposition and fastening of oversized and overweight freight in transit. This verification must be carried out at commercial inspection points. The

crew chief or the senior dispatcher, the railcar foreman or the senior railcar inspector participate in the inspection. Upon detection of load shift or a an upsetting of the fastenings that create a threat to traffic safety, the railcar is decoupled and steps are taken to correct the loading and ensure the further safe transit of the freight.

In selecting the most efficient routings for the passage of oversized and overweight freight, the Shipping Administration of MPS gives permission for the dispatch and passage of freight taking two or more railroads and with a dimensional excess of 3rd-6th degrees of lower, 4th-6th degrees of lateral and 3rd degree of upper and extreme non-conformity, as well as all freight on 16-axle heavy-load cars with an axle load greater than 21 tons and on heavy-load cars with a greater number of axles regardless of the axle loads. If the indicated freights travel within the boundaries of a railroad, then the railroad gives permission for their dispatch.

Oversize freight of 1st-2nd degrees of lower and 2nd degree of upper non-conformity, as well as freights loaded on 16-axle heavy-load cars with an axle load of 21 tons or less and on 8-12-axle heavy-load cars with an axle load greater than 21 tons, are dispatched on the instructions of the railroad administration. The station chief has been granted the right to permit the dispatch of freight with a non-conformity of 1st-3rd degrees of lateral and 1st degrees of upper non-conformity, along with a number of non-oversized ones, on heavy-load cars.

Carrying Out Shunting Operations

The regulations basically preserve the former provisions on the specific features for carrying out shunting and cutting operations, passage through sorting yards of oversized freight on flatcars and gondola cars, and empty and loaded heavy-load cars. The changes concern questions of the placement of railcars with oversized freight in long trains and their escort front and rear with railcars with standard freight.

With regard to improving the clearance features of apparatus structures and the space between the track, the possibility of the placement of freight with 2nd and 3rd degrees of non-conformity, aside from freights of the former zero (now 1st) degree of non-conformity, into long consists has been found. In developing the provisions on the procedure for putting escort cars for oversized freight in trains, the train braking conditions were taken into account in the grazing of structures by the checking frame, the disposition of railcars with oversized freight on station track with regard to the clearance point and the passage of loaded heavy-load cars across bridges.

Proceeding from this, the former requirement for the need for front and rear escort of railcars loaded with oversized freight of the 2nd-3rd degrees (new) has been abolished, and consequently, this freight, as for the 1st degree of non-conformity (the former zero degree), are placed in the trains without escort cars. For freight with other degrees of non-conformity, the following rules have been introduced. Freight of the 4th-5th degrees of lower and lateral non-conformity should have no less than one escort railcar with standard size freight or empty cars in front and rear. Cars with 6th-degree

and extreme non-conforming freight should be placed in the middle of the train consist or no closer than 20 cars from the checking frame. In shipping oversized or extremely oversized freight with a checking frame in a special train with a separate locomotive, it should be located no closer than five cars from the checking frame and have one escort car to the rear of the train.

Heavy-load cars with a freight capacity of up to 300 tons may be placed in train consists. Escort is not envisaged for empty heavy-load cars or loaded 4-, 6- and 8-axle ones, except in individual cases, as well as coupled-type ones with a freight capacity of 120 tons. Loaded heavy-load cars with 12 or more axles, aside from the indicated coupled type, should have two escort cars on each side, and if there are several of these heavy-load cars in the train, they should be divided by no fewer than three cars. Any type of cars can be used for escort--empty or loaded--that are no more than 40 tons.

In the new regulations, the procedure that existed earlier for the dispatch of oversized railcars on electrified sections and electrified trains has basically been preserved and extended to a number of other railcars, in particular to 8-axle gondola cars with clearance T_{pr} and tank cars with clearance T_{ts} . The rules that have been established for these railcars will be effective until the completion of operations on the network for the elimination of existing clearance limitations on their passage.

The Passage of Oversized and Overweight Freight on Sidings and in Stations

The procedure for the passage of non-conforming and overweight freight on lines and in stations is established proceeding from the assurance of traffic safety and the least operating losses caused by the specific precautionary measures in carrying out shipping. In fulfilling these requirements, it is essential to take into account the magnitude of the non-conformity of the freight, the axle and linear loads, the nature of the track, structures clearance, the quantity of track, the width of the space between the tracks and the scale of traffic on the transit routing.

Freight with small non-conformity (1st-2nd lower, 1st-3rd lateral and 1st-2nd upper degrees) can pass in accordance with the existing procedure for route traffic flow. At large degrees of non-conformity and extreme non-conformity, the necessity arises of reducing traffic speeds, closing traffic on companion tracks, escort and the execution of a number of other measures. This freight should pass primarily on single- or double-track lines, where there are no oversized structures and the traffic intensity of the section is not great.

In stations, the receipt and transit of oversized freight must be accomplished on track along which passage does not pose a threat to rolling stock on adjacent lines and is not limited by structure clearances. These requirements are satisfied with a distance of no less than 4,800 mm to the adjoining track centerline, the absence of high platforms for the given track and the correspondence of the structures on it to clearance C.

The new regulations have defined the conditions that should be observed in the use of other station track that does not meet the requirements indicated above for the passage of oversized freight. With the entry and exit from the

station of oversized freight with 4th-6th degrees of non-conformity, the distances between the track of 4,100 mm existing in the area of the clearance points are inadequate for rolling stock located on adjacent track. Therefore, it should be deflected into the permitted zone of distance between the tracks at a distance of no less than 10 meters from the clearance point.

New provisions have been introduced on the obligations and procedure for the actions of station employees, shunting and train dispatchers in the placement into trains, and the dispatch and passage of oversized and overweight freights. They include the requirement of indicating the index of non-conformity in the wheel report for cars with oversized loads and supplementing the train number with this index. The index of non-conformity, data on the axle and linear loads and the freight capacity of heavy-load cars must be taken into account in establishing the conditions for the passage of the given freight in accordance with the features of the sections, as cited in the extracts from the orders by railroad and division, which are provided by every dispatcher point and formation station and by the issuance of warnings.

Orders for the railroad and the divisions are composed in accordance with unified requirements cited in the regulations. The clearance checking stations carry out the preparation of materials for the orders of the railroads and the conditions for the passage of non-conforming and overweight loads on the sections. The regulations include two new techniques for executing this operation: for determining the possibility and conditions for the passage of oversize freights through structures and apparatus and along adjacent tracks of double-track lines. Also given are requirements for determining the conditions for the passage of heavy-load cars along track and across bridges.

The passage of freight of any degree of non-conformity on sections that meet clearance C do not require limitations in the established speeds. The transit conditions through non-conforming structures can be determined by calculation proceeding from the established norms for minimally allowable clearances. According to the results of calculations, the transit speed of freight according to the clearance conditions is established proceeding from the following five traffic modes: the first--with a speed of up to 90 km/hr; the second--to 40 km/hr; the third--10 km/hr; the fourth--3-5 km/hr; and the fifth, from 3-5 km/hr with the execution of preliminary verification checking of the actual dimensions of the structure, the state of the track and the elimination of faults in gauge width and level. The fifth mode takes into account the maximum possibilities for the passage of freight through structures.

The technique envisages the execution of calculations of the conditions for the passage of freight through structures by two methods: degree of freight non-conformity and its actual dimensions. The first method is recommended for the composition of diagrams for the passability of railroad sections by non-conforming freight. For each section, the greatest degree of non-conformity in the lower, lateral and upper zones that the freight can have for the possibility of passage on that section are determined (Fig. 5). The diagrams are composed by the clearance-checking stations in accordance with a special technique developed by VNIIZhT. These diagrams are suitable for

operational work. With their aid, it is possible to determine quickly the possibility of the passage of freight of the corresponding degree along the railroad and the selection of the transit routing.

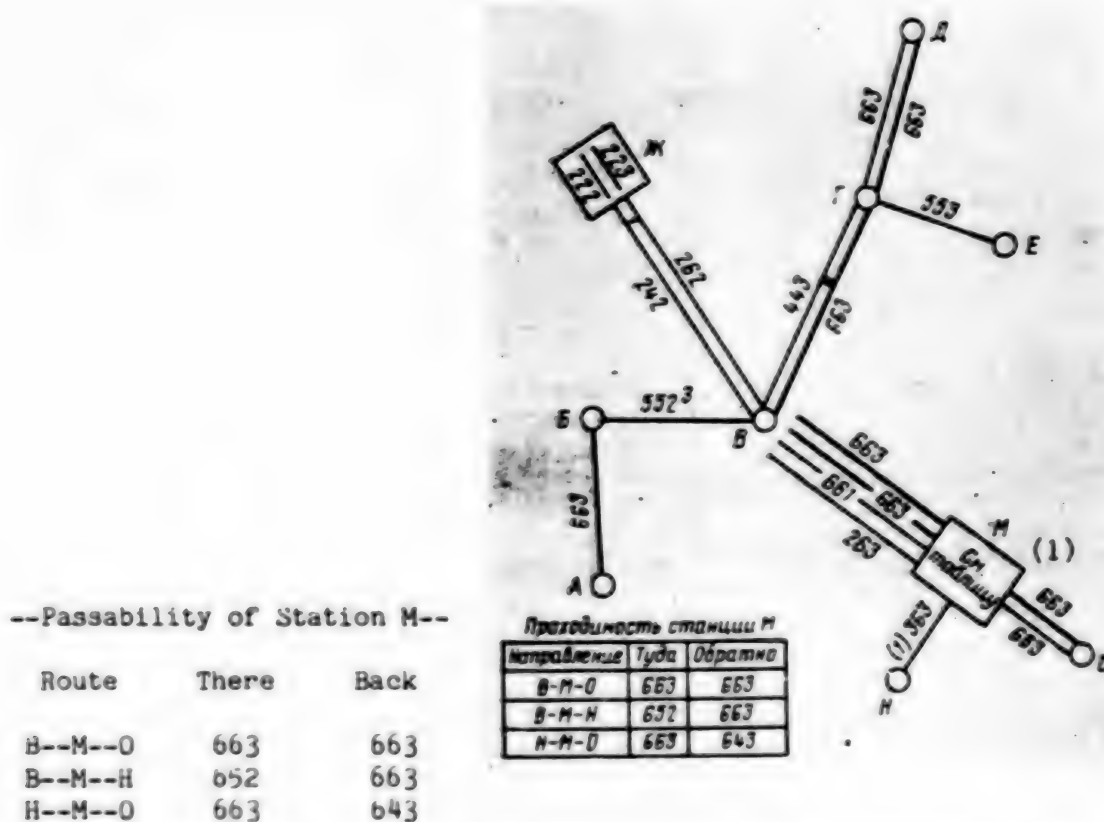


Fig. 5. Example of a diagram for determining the possibility of the passage of non-conforming freight:

1,2--features of the non-conforming track spacing. Key: 1--see table.

The formulas cited in the regulations for the given method are correct for curves of all radii if the freight does not have theoretical non-conformity. For freights with theoretical non-conformity, they can be used only for curves with a radius of 350 meters and more. For curves with a smaller radius, the regulations give only general indications for the calculations. In order to ease this work, more detailed recommendations are cited below. In curves with a radius of less than 350 meters, which are most often frog curves, the non-conformity of the freight increases beyond the theoretical. This occurs in connection with the fact that the difference of the geometrical deflection of the freight and the theoretical railcar in a curve with a radius of less than 350 meters will be more than the indicated difference determined for the theoretical curve. The difference in these values must also be taken into account in determining the maximum degree of non-conformity that can pass at

structures located on curves with a radius of less than 350 meters.

Analysis has shown that based on the parameters of the rolling stock being used for the shipment of oversized freight, it is possible to adopt for the internal cross-sections E_i : 50 mm where $R=300$ meters; 100 mm where $R=250$ meters and 200 mm. For the exterior cross-sections E_e : 90 mm where $R=300$ meters; 105 mm where $R=250$ meters and 145 mm where $R=200$ meters.

The indicated additions are insufficient in curves with a radius of 250 and 200 meters and in determining the transit conditions for freights longer than 45 meters that have a theoretical non-conformity of the 4th-6th degree and are loaded on a coupled-type heavy-load car with a freight capacity of 120 tons with two intermediate flatcars and a freight capacity of 480 tons, as well as freight of these degrees on articulated TSCh-500 heavy-load cars. The calculation of the necessary supplements for these freights would lead to a considerable reduction in the passability of other freight as well. Therefore, for them it is expedient to employ the second method of calculating the conditions for transit that is indicated in the regulations--according to the actual dimensions of the freight.

The principal purpose of the second method is for extreme non-conforming freight and those cases where the non-conforming freight enters a given degree to an inconsiderable extent, while its passage through this or that structure for that degree is not assured.

The technique for determining the passage of oversized freight on adjacent tracks on double-track lines also has two methods: tabular and computational. Using the tabular method, it is possible to determine quickly, knowing the track spacing, which is given in the table in 50-mm increments from 3,750 to 4,100 mm, what degrees of freight can pass on adjacent tracks. The upper degree is not indicated in the table, and it should, as has already been noted, be taken into account in the loading documentation in the conferring of the lateral degree of non-conformity to the freight.

In employing the tabular method, the correct selection of the features of the space between the track for every section is of great significance. For straight sections, this is the least actual width of the existing ones. For curved sections, it is not the actual width that should be used, but the one cited for the straight ones. The cited width of the space between the tracks is established for every line and correspondingly every section according to the formula cited in the regulations on page 77. (1)

The calculation method can be used to solve the question of the one-time passage of any specific freight on a section with non-standard track spacing.

If the freight is of the 6th degree of lateral non-conformity, it enters the zone necessary for the safe passage of any freight on adjacent lines located at a distance of 4,100 mm or less. In connection with this, in the passage of freight with the indicated degree on double-track lines, oncoming traffic on the adjacent line is not permitted.

Substantial changes were introduced in the procedure for the employment, and transit of freight with, a checking frame. It is manufactured and installed on the railcar by the shipper in the shipping of extremely oversized freight, as well as oversized freight in the 6th degree of lateral and lower non-conformity. In individual cases, depending on the presence of non-conforming structures on the railroad, the checking frame, at the discretion of the chief of the railroad, can be employed in the shipping of freight with lesser degrees of non-conformity as well.

The principal purpose of the checking frame is to discover obstacles to passage for the given freight arising unexpectedly or not fully taken into account in the calculation of the conditions. Under conditions where the complete verification and surveying of the clearances of all structures with the necessary precision is accomplished each year, the need for the use of a checking frame will recede.

In the former regulations, the size of the checking frame was established in a number of cases according to the theoretical non-conformity without regard for its actual deflections in curves. This led to the fact that in curves, the frame took up less space than the freight, and passed freely past those obstacles that the freight grazed against.

This shortcoming has been eliminated in the new regulations. The checking frame is of two shapes: the basic shape--for verifying the presence of obstacles on straight sections of track--and the supplemental--for curved sections of track. The dimensions of the basic shape are established according to the actual transverse dimensions of the freight. The supplemental profile is formed through increasing the basic one to the value of the actual geometrical deflection of the critical points in a curve with a radius of 350 meters.

The checking frame is installed in the car king-pin section turned toward the locomotive. For ensuring the essential visibility for the freight with lower and lateral non-conformity, it is possible to employ a boxcar or gondola car for the installation of the checking frame, and just a gondola car for freight with upper non-conformity. If the freight routing direction changes, it is necessary to install checking frames in both king-pin sections of the car. The car with the checking frame is put in front or is separated from the locomotive by a single empty flatcar.

The procedure for accompanying freight with a checking frame has been changed. Accompaniment is compulsory only in places where due to a lack of structures clearances, the traffic speeds of non-conforming freights should be less than 40 km/hr. The list of such places is established by order of the railroad. The location of the accompanying person is the rear compartment of the locomotive. The instructions of this person on the procedure for passing through the corresponding places are obligatory for the locomotive crew.

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